January 2022

MONTGOMERY COUNTY NY
Made of Something Stronger

PROJECT MANUAL

Montgomery County
Health & Human Services

1 Venner Road
Amsterdam, New York 12010

Prepared for:

MONTGOMERY COUNTY

Purchasing Department
County Annex Building
P.O. Box 1500 - 20 Park Street
Fonda, New York 12068-1500

Montgomery County Bid No.: 16-21

Prepared by:

C.T. MALE ASSOCIATES
50 Century Hill Drive
Latham, New York 12110

(518) 786-7400 | FAX (518) 786-7299
www.ctmale.com

C.T. Male Associates Project No.: 20.0651

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C.T. MALE ASSOCIATES
ENGINEERING, SURVEYING, ARCHITECTURE, LANDSCAPE ARCHITECTURE & GEOLOGY, D.P.C.

MONTGOMERY COUNTY NY

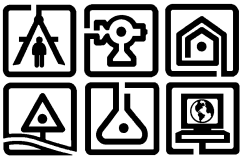
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DIVISION 0

Procurement & Contracting Requirements

DOCUMENT 000101 - PROJECT TITLE PAGE

1.1 PROJECT MANUAL

A.	Project Name:	**Montgomery County Health & Human Services**
B.	Project Location:	1 Venner Road Amsterdam, New York
C.	Owner:	Montgomery County
D.	Owner's Address:	County Annex Building P.O. Box 1500 20 Park Street Fonda, New York 12065-1500
E.	Owner Project No.:	16-21
F.	Architect Project No.:	20.0651
G.	Architect:	 C.T. MALE ASSOCIATES Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. 50 Century Hill Drive, Latham, NY 12110 Phone: (518) 786-7400. Website: www.ctmale,com.
H.	Issued:	January 31, 2022
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END OF DOCUMENT 000101

MONTGOMERY COUNTY

BID No. 16-21

COUNTY ANNEX BUILDING
P.O. BOX 1500, 20 PARK STREET
FONDA, NY 12068-1500

OFFICE OF THE EXECUTIVE
MATTHEW L. OSSENFORT
COUNTY EXECUTIVE

COUNTY LEGISLATURE
MICHAEL J. PEPE
CHAIRMAIN OF THE LEGISLATURE

MARTIN P. KELLY
Legislator District 1

BRIAN D. SWEET
Legislator District 2

ROY S. DIMOND
Legislator District 3

ROBERT HEADWELL, JR.
Legislator District 4

DANIEL P. WILSON
Legislator District 5

JOHN M. DUCHESSI
Legislator District 6

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Legislator District 9

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COMMISSIONER

THOMAS LIPPIE
DEPUTY COMMISSIONER

JESSICA BATES
DEPUTY COMMISSSIONER – FISCAL OPERATIONS

COUNTY ATTORNEY
MEGHAN M. MANION, ESQ.

COUNTY PURCHASING DEPARTMENT
JACLYN HERNIGLE, PURCHASING BUYER

DEPARTMENT OF PUBLIC WORKS
ERIC M. MEAD, COMMISSIONER

DOCUMENT 000107 – SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

A. Architect:

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture,
Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive
Latham, NY 12110



Richard A. Campagnola, R.A.
License No. 025359

1/31/2022
Date

B. Structural Engineer:

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture,
Landscape Architecture & Geology, D.P.C.
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Latham, NY 12110

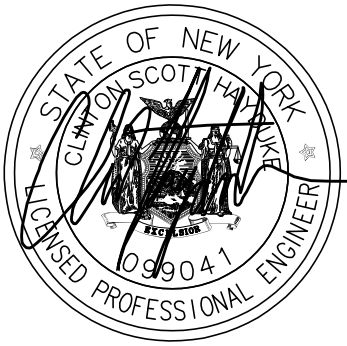


Christopher M. Shaver, P.E.
License No. 071071

1/31/2022
Date

C. Plumbing Engineer:

ERDMAN ANTHONY
11 Century Hill Drive
Latham, NY 12110



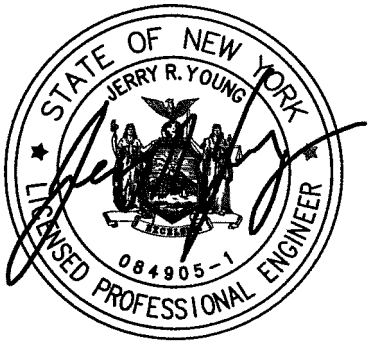
1/31/2022

Clinton S. Hayduke, P.E.
License No. 099041

Date

D. HVAC Engineer:

ERDMAN ANTHONY
11 Century Hill Drive
Latham, NY 12110



1/31/2022

Jerry R. Young, P.E.
License No. 084905

Date

E. Electrical Engineer:

ERDMAN ANTHONY
11 Century Hill Drive
Latham, NY 12110



1/31/2022

Bruce R. Wallman
License No. 069601

Date

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PROJECT MANUAL

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TITLE: MONTGOMERY COUNTY
HEALTH & HUMAN SERVICES

DATE: January 31, 2022

PROJECT NO.: 20.0651

BY: C.T. MALE ASSOCIATES

SHEET NO.	DESCRIPTION
G-001	COVER SHEET
AC-001	CODE COMPLIANCE PLAN & ANALYSIS
AC-002	CODE COMPLIANT STANDARD DETAILS
AC-003	CODE COMPLIANCE SITE PLAN
AE-101	EXISTING CONDITIONS PLAN
AD-101	DEMOLITION FLOOR PLAN
AD-401	ENLARGED DEMOLITION FLOOR PLANS
A-101	FLOOR PLAN
A-102	INTERIOR FRAMING PLAN
A-103	FURNITURE LAYOUT PLAN
A-104	FINISH FLOORING PLAN
A-105	REFLECTED CEILING PLAN
A-106	MEZZANINE PLAN
A-201	ELEVATIONS
A-301	BUILDING SECTIONS
A-401	ENLARGED TOILET ROOM PLANS
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A-403	ENLARGED PLANS AND ELEVATIONS
A-404	LOBBY PLAN AND ELEVATIONS
A-405	RECEPTION PLAN AND ELEVATIONS
A-501	WALL TYPES
A-502	CEILING DETAILS
A-503	FLOORING AND WALL DETAILS
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SHEET NO.	DESCRIPTION
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P-000	PLUMBING COVER SHEET
PD-101	PLUMBING WASTE & VENT DEMOLITION PLAN
PD-102	PLUMBING DOMESTIC WATER DEMOLITION PLAN
P-101	PLUMBING WASTE & VENT PLAN
P-102	PLUMBING – DOMESTIC WATER PLAN
P-600	PLUMBING SCHEDULES & DETAILS
M-000	MECHANICAL COVER SHEET
MD-101	MECHANICAL FIRST FLOOR DEMOLITION PLAN
M-101	MECHANICAL FIRST FLOOR PLAN
M-102	MECHANICAL MEZZANINE PLAN
M-500	MECHANICAL DETAILS
M-600	MECHANICAL SCHEDULES
E-000	ELECTRICAL COVER SHEET
E-100	LIGHTING PLAN
E-200	POWER PLAN
E-201	MEZZANINE POWER PLAN
E-300	ONE LINE DIAGRAM
E-600	ELECTRICAL SCHEDULES
SS-100	SPECIAL SYSTEMS PLAN
T-100	TELECOMMUNICATION PLAN
FP-000	FIRE PROTECTION COVER SHEET AND DETAILS
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FA-101	FIRE ALARM PLANS – FOR INFORMATION ONLY
FA-102	FIRE ALARM PLANS – FOR INFORMATION ONLY

END OF DOCUMENT 000115

SECTION 001116 - INVITATION TO BID

Sealed Bids will be received by **Montgomery County**, at the Office of the Purchasing Department, located at the County Annex Building, 20 Park Street, Fonda, NY 12068, (Phone: 518-853-3351) until **2:00 PM** local time on **Tuesday, March 8, 2022,** and then, at said office, publicly opened and read aloud for:

MONTGOMERY COUNTY
Health & Human Services

Montgomery County will award Multiple Prime Contracts as follows:

CONTRACT NUMBER AND TYPE:

Contract 1 – General Construction
Contract 2 – Plumbing
Contract 3 – Mechanical (HVAC)
Contract 4 – Electrical

Bids will be received on a Stipulated Sum basis, including unit prices, alternates and allowances, in accordance with the Summary of Work as described in the Contract Documents.

The Work shall be substantially complete, for occupancy and use by the Owner, within **240** calendar days, in accordance with the Milestone Project Schedule included in the Bid Documents, and completed and ready for final payment within **270** days after the date when the contract time commences to run. The Contractor(s) and the Contractor(s)' surety, if any, shall be assessed liquidated damages for each calendar day of delay after the date established for substantial completion in the Documents until the work is complete.

The labor on this contract shall be performed in all respects in full accordance with the Labor Law of the State of New York. Contractors must conform to the New York State prevailing wage rate schedules which are annexed to and form a part of the specifications for this project.

Bids should not include New York State sales and compensating use taxes on materials incorporated into the work.

Bids actually received by mail or by hand after the appointed time on the date specified shall be rejected, notwithstanding that such Bid may have been placed in a mail box or other mail receptacle regularly maintained by the United States Postal Service before such time, and ordinarily in sufficient time to have been delivered on time.

Bid security in the amount of **5%** of the Bid must accompany each Bid in accordance with the Instructions to Bidders.

The successful Bidder will be required to furnish a performance bond and a payment bond, each in an amount equal to **100%** of the contract price.

Drawings and Specifications may be examined on and after **Tuesday, February 8, 2022**, during normal business hours at the following locations:

1. MONTGOMERY COUNTY (**OWNER**), located at 6 Park Street, Fonda, NY 12068, (Phone: 518-853-3814) by appointment only, from 8 AM to 4:00 PM, Monday through Friday;

2. C.T. MALE ASSOCIATES, Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (**ARCHITECT**), 50 Century Hill Drive, Latham, NY 12110, tel. (518) 786-7400, by appointment only, from 8:00 AM to 4:00 PM Monday through Friday;

3. EASTERN CONTRACTOR'S ASSOCIATION, INC., 6 Airline Dr., Albany, NY 12205, tel. (518) 869-0961, from 8 AM to 5 PM Monday through Friday; and

4. DODGE on-line only at www.construction.com.

Complete sets of Bidding and Contract Documents in electronic format may be obtained at no charge from the OWNER, by contacting the office of the Purchasing Department, located at 20 Park Street, P.O. Box 1500, Fonda, NY 12068 at telephone (518) 853-3351 during normal business hours, Monday – Friday, from 8:30 AM to 4:00 PM, to download copies from the County Website at:

https://www.co.montgomery.ny.us/web/sites/departments/purchasing/contact.asp.

All Bidders who intend to submit bids from documents acquired here MUST provide their contact information. Only those Contract Documents obtained in this manner will enable a prospective bidder to be identified as an official plan holder of record. Contract Documents obtained from other sources may not be accurate or may not contain addenda that may have been issued. Printed copies of the Contract Documents will not be available. Bidders wishing to obtain printed copies of the Contract Documents shall arrange at their own cost any required reproduction of the electronic documents.

In accordance with Section 103-d of the General Municipal Law, at the time Contractor submits its bid, an authorized and responsible person shall execute and deliver a non-collusive bidding certification on Contractor's behalf.

There will be a Pre-bid Conference, on **Thursday, February 17, 2022 at 2:00 PM** local time, at the **project site**, located at 1 Venner Road, Amsterdam, NY 128010 to review the Bidding Documents, as described in the Instructions to Bidders, after which Bidder's will be invited to tour the existing building. Attendance at this meeting by all Bidders is strongly recommended as representatives of the Owner, and Architect will be present. No additional pre-bid conferences will be scheduled.

All requests for interpretations must be submitted in writing to the **ARCHITECT**, at the above address, or via email to **r.campagnola@ctmale.com**, for final clarifications by no later than **Tuesday, March 1, 2022**. Requests received after this date will not receive a response. Addendum will be issued to all Bidders who are known by the issuing office to have received a complete set of Bidding Documents by no later than **Friday, March 4, 2022,** though addenda may be issued at any time prior to receipt of Bids as noted in the Instructions to Bidders.

Montgomery County reserves the right to waive any informalities or irregularities in the Bids received, or to reject any or all Bids without explanation.

By Order of:

County Executive
Montgomery County

END OF SECTION 001116

SECTION 002113 – INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.

1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

END OF SECTION 002113

AIA® Document A701™ – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Montgomery County Health & Human Services
1 Venner Road, Amsterdam, New York 12010

Montgomery County will award multiple prime contracts for the alterations to the former Recorder building, which has been purchased by the County for the relocation of certain municipal business offices. The work generally includes the reconfiguration of spaces, the reconfiguration or extension of existing systems, and the installation of additional equipment, in which portions of the demolition have been completed by the Owner. The Work limits are defined in the Contract Documents and will require coordination with the Owner's representative during construction operations for Work of separate contractors being performed by the County.

Prime Contracts are separate contracts between the Owner and separate Contractors, representing significant construction activities. Each prime contract is performed concurrently with and closely coordinated with construction activities performed on the Project under other prime contracts.

Bids will be received on a Stipulated Sum basis, including unit prices, alternates and allowances, if any, in accordance with the Summary of Work as described in the Contract Documents.

The Work of this Contract includes, but is not limited to, the following:

1. Contract No. 1 – General Construction
2. Contract No. 2 – Plumbing
3. Contract No. 3 – Mechanical (HVAC)
4. Contract No. 4 – Electrical
5. Contract No. 5 – Fire Suppression

The County is exempt from taxes, and bids should not include New York State Sales and Use taxes on materials and supplies incorporated into the work.

The labor on this contract shall be performed in all respects in full accordance with the Labor Law of the State of New York. Contractors must conform to the New York State prevailing wage rate schedules which are annexed to and form a part of the specifications for this project. The PRC # for the project is 2021010630.

THE OWNER:
(Name, legal status, address, and other information)

Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street
Fonda, New York 12068-1500

Jaclyn Hernigle, Purchasing Buyer
E-mail: jhernigle@co.montgomery.ny.us
Tel: (518) 853-3351

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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THE OWNER'S REPRESENTATIVE:
(Name, legal status, address, and other information)

Montgomery County
Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500

Eric M. Mead
Commissioner
E-mail: emead@co.montgomery.ny.us
Tel: (518) 853-3814

THE ARCHITECT:
(Name, legal status, address, and other information)

C.T. Male Associates
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive
Latham, New York 12110

Richard A. Campagnola, R.A.
Principal Architect
E-mail: **r.campagnola@ctmale.com**
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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

§ 1.10 ARCHITECT/ENGINEER is the person, firm, or corporation named as the **Architect** in the Agreement, or the duly appointed employees and representatives of the named **Architect**.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.
- **.7** the Bidder has investigated all required fees, permits, and regulatory requirements of authorities having jurisdiction and has properly included in the submitted bid the cost of such fees, permits, and requirements not otherwise indicated as provided by Owner.
- **.8** the Bidder is a properly licensed Contractor according to the laws and regulations of Montgomery County and meets qualifications indicated in the Procurement and Contracting Documents.
- **.9** the Bidder has incorporated into the Bid adequate sums for work performed by installers whose qualifications meet those indicated in the Procurement and Contracting Documents.

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§ 2.2 In accordance with Section 103-d of the General Municipal Law, at the time the Bid is submitted, an authorized and responsible person shall execute and deliver a non-collusive bidding certification on Bidder's behalf.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

Drawings and Specifications may be examined, on and after **Tuesday, February 8, 2022**, during normal business hours, at the following locations:

.1 MONTGOMERY COUNTY, (Owner), located at 6 Park Street, Fonda, NY 12068, (Phone: 518-853-3814) by appointment only, from 8 AM to 4:00 PM, Monday through Friday;

.2 C.T. MALE ASSOCIATES, Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C. (Architect), 50 Century Hill Drive, Latham, NY 12110, tel. (518) 786-7400, by appointment only, from 8:00 AM to 4:00 PM, Monday through Friday;

.3 Eastern Contractor's Association, Inc., 6 Airline Dr., Albany, NY 12205, tel. (518) 869-0961, from 8 AM to 5 PM, Monday through Friday; and

.4 Dodge on-line only at www.construction.com.

Complete sets of Bidding and Contract Documents in electronic format may be obtained at no charge from the **OWNER**, by contacting the office of the Purchasing Department, located at 20 Park Street, P.O. Box 1500, Fonda, NY 12068 at telephone (518) 853-3351 during normal business hours, Monday–Friday, from 8:30 AM to 4:00 PM, to download copies from the County Website at **https://www.co.montgomery.ny.us/web/sites/departments/purchasing/contact.asp**.

All Bidders who intend to submit bids from documents acquired here **MUST** provide their contact information. Only those Contract Documents obtained in this manner will enable a prospective bidder to be identified as an official plan holder of record. Contract Documents obtained from other sources may not be accurate or may not contain addenda that may have been issued. Printed copies of the Contract Documents will not be available. Bidders wishing to obtain printed copies of the Contract Documents shall arrange at their own cost any required reproduction of the electronic documents.

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.

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(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

All requests for interpretations must be submitted in writing, using form found in the Project Manual, to the **Architect**, at C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C., 50 Century Hill Drive, Latham, New York 12110, or via email **to r.campagnola@ctmale.com**, for final clarifications by no later than **Tuesday, March 1, 2022**. Requests received after this date will not receive a response.

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

Addenda may be issued by email to all known Bidders at any time prior to the receipt of bids.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda may be issued at any time prior to the receipt of bids, including an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid. Owner may elect to waive the requirement for acknowledging receipt of Addenda as follows:

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.1 Information received as part of the Bid indicates that the Bid, as submitted, reflects modifications to the Procurement and Contracting Documents included in an unacknowledged Addendum.

.2 Modifications to the Procurement and Contracting Documents in an unacknowledged Addendum do not, in the opinion of Owner, affect the Contract Sum or Contract Time.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form. Owner may elect to disqualify a bid due to failure to submit a bid in the form requested, failure to bid requested alternates or unit prices, failure to complete entries in all blanks in the Bid Form, or inclusion by the Bidder of any alternates, conditions, limitations or provisions not called for.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.1.9 Bids shall not include New York State sales and compensating use taxes on materials incorporated into the work .

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:
(Insert the form and amount of bid security.)

Bid security in the amount of **5%** of the Bid must accompany each Bid in accordance with the Instructions to Bidders.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been

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notified of the acceptance of its Bid, a Bidder may, beginning **forty-five (45)** days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

Two paper copies of Sealed Bids will be received by **Montgomery County**, at the Offices of the Purchasing Department, located in the County Annex Building, at 20 Park Street, Fonda, New York 12068 (Phone: 518-853-3351), until **2:00 p.m.** local time on **Tuesday, March 8, 2022,** and then, at said office, publicly opened and read aloud.

Bids actually received by mail or by hand after the appointed time on the date specified shall be rejected, notwithstanding that such Bid may have been placed in a mail box or other mail receptacle regularly maintained by the United States Postal Service before such time, and ordinarily in sufficient time to have been delivered on time.

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

.1 Any such modifications to or withdrawal of a bid may only be made by persons authorized to act on behalf of the Bidder. Authorized persons are those so identified in the Bidder's corporate bylaws, specifically empowered by the Bidder's charter or similar legally binding document acceptable to Owner, or by a power of attorney, signed and dated, describing the scope and limitations of the power of attorney. Make such documentation available to Owner at the time of seeking modifications or withdrawal of the Bid.

.2 Owner will consider modifications to a bid written on the sealed bid envelope by authorized persons when such modifications comply with the following: the modification is indicated by a percent or stated amount to be added to or deducted from the Bid; the amount of the Bid itself is not made known by the modification; a signature of the authorized person, along with the time and date of the modification, accompanies the modification. Completion of an unsealed bid form, awaiting final figures from the Bidder, does not require power of attorney due to the evidenced authorization of the Bidder implied by the circumstance of the completion and delivery of the Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted.

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ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.2.1 Owner reserves the right to reject a bid based on Owner's and Architect's evaluation of qualification information submitted following opening of bids.

.1 Owner's evaluation of the Bidder's qualifications will include: status of licensure and record of compliance with licensing requirements, record of quality of completed work, record of Project completion and ability to complete, record of financial management including financial resources available to complete Project and record of timely payment of obligations, record of Project site management including compliance with requirements of authorities having jurisdiction, record of, and number of current claims and disputes and the status of their resolution, and qualifications of the Bidder's proposed Project staff and proposed subcontractors.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.1.1 Contractor's Qualification Statement shall be submitted no later than **three (3)** business days following Architect's request.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable, or no later than **three (3)** business days following Architect's request as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

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.1 Provide list of major subcontractors, suppliers, and manufacturers furnishing or installing products on forms provided. Include those subcontractors, suppliers, and manufacturers providing work totaling five (5) percent or more of the Bid amount. Subcontractors, suppliers, and manufacturers shall not be changed from those submitted without approval of Architect.

.2 Provide a proposed cost breakdown of the bid amount, on forms provided, including alternates, in enough detail to facilitate continued evaluation of bid.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

The successful Bidder will be required to furnish a performance bond and a payment bond, each in an amount equal to **100%** of the contract price.

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than **ten** [**10**] days after the date of Notice of Intent to Award and no later than the date of execution of the Contract, whichever occurs first. Owner may deem the failure of the Bidder to deliver required bonds within the period of time allowed a default.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The Bonds shall be executed and be in force on the date of the execution of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

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.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
Supplementary Conditions Modifications and other conditions of the Contract as noted herein.

§ 8.2 Subsequent to the Notice of Intent to Award, and within **seven [7]** days after the prescribed Form of Agreement is presented to the Awardee for signature, the Awardee shall execute and deliver the Agreement to Owner, in such number of counterparts as Owner may require.

§ 8.3 Owner may deem as a default the failure of the Awardee to execute the Contract and to supply the required bonds when the Agreement is presented for signature within the period of time allowed.

§ 8.4 Unless otherwise indicated in the Procurement and Contracting Documents or the executed Agreement, the date of commencement of the Work shall be the date of the executed Agreement.

§ 8.5 In the event of a default, Owner may declare the amount of the Bid security forfeited and elect to either award the Contract to the next responsible bidder or re-advertise for bids.

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User Notes: (1884318810)

DOCUMENT 002513 - PREBID MEETINGS

1.1 PREBID MEETING

A. The **Owner's Representative** will conduct a Prebid meeting as indicated below:
   1. Meeting Date: **Thursday, February 17, 2022**.
   2. Meeting Time: **2:00 p.m.**, local time.
   3. Location: Project Site, located at 1 Venner Road, Amsterdam, NY 12010.
   4. No additional pre-bid conferences will be scheduled.

B. Attendance:
   1. Prime Bidders: Attendance at Prebid meeting is **strongly recommended**.
   2. Subcontractors: Attendance at Prebid meeting is recommended.

C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of **three** business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:
   1. Procurement and Contracting Requirements:
      a. Advertisement for Bids.
      b. Instructions to Bidders.
      c. Bidder Qualifications.
      d. Bonding.
      e. Insurance.
      f. Bid Security.
      g. Bid Form and Attachments.
      h. Bid Submittal Requirements.
      i. Bid Submittal Checklist.
      j. Notice of Award.
   2. Communication during Bidding Period:
      a. Obtaining documents.
      b. Access to Project Web site.
      c. Bidder's Requests for Information.
      d. Bidder's Substitution Request/Prior Approval Request.
      e. Addenda.
   3. Contracting Requirements:
      a. Agreement.
      b. The General Conditions.
      c. The Supplementary Conditions.
      d. Other Owner requirements.
   4. Construction Documents:
      a. Scopes of Work.
      b. Temporary Facilities.
      c. Use of Site.
      d. Work Restrictions.
      e. Alternates, Allowances, and Unit Prices.
      f. Substitutions following award.
   5. Separate Contracts:
      a. Work by Owner.
      b. Work of Other Contracts.

6. Schedule:
    a. Project Schedule.
    b. Contract Time.
    c. Liquidated Damages.
    d. Other Bidder Questions.
7. Site/facility visit or walkthrough.
    a. Bidder's will be invited to visit the site on their own, though no provisions for on-site parking are currently available
8. Post-Meeting Addendum.

E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees and others known by the issuing office to have received a complete set of Procurement and Contracting Documents. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
    1. Sign-in Sheet: Minutes will include list of meeting attendees.
    2. List of Planholders: Minutes will include list of planholders.

END OF DOCUMENT 002513

DOCUMENT 002600 – PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.

B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award.
   1. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.
   1. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
   1. Extensive revisions to the Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
   3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

A. Procurement Substitution Request: Submit to **Owner** through **Architect**. Procurement Substitution Request must be made in writing **by prime contract Bidder only** in compliance with the following requirements:

   1. Requests for substitution of materials and equipment will be considered if received no later than **10** days prior to date of bid opening.
   2. Submittal Format: Submit **three** copies of each written Procurement Substitution Request, using **CSI Substitution Request Form 1.5C** bound in Project Manual.
      a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
      b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
         1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
         2) Copies of current, independent third-party test data of salient product or system characteristics.
         3) Samples where applicable or when requested by Architect.

4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES or applicable code organization.
7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.

c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 002600

EXCEPT FOR ABOVE REFERENCED ITEMS WHICH FOLLOW

002600.1

SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: **Montgomery County Health & Human Services**
1 Venner Road, Amsterdam, New York 12010

To: C.T. Male Associates
50 Century Hill Drive, Latham, New York 12110

Re: _____

Substitution Request Number: _____

From: _____

Date: _____

A/E Project Number: 20.0651

Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

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110 South Union St., Suite 100, Alexandria, VA 22314

Form Version: October 2017
CSI Form 1.5C

DOCUMENT 003119 - EXISTING CONDITION INFORMATION

PART 1 - GENERAL

1.1 EXISTING CONDITION INFORMATION

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.

B. Copies of applicable drawings for original building construction, titled “Evening Recorder, W.J. Kline & Son, Inc., Pub.”, dated February 8, 1966 that include information on existing conditions including previous construction at Project site are available as appended to this Document.
   1. Existing Conditions Plan is available for viewing as part of Drawings.

C. Bidders may examine any available existing conditions information by giving Owner reasonable advance notice.
   1. Owner will make copies available for a fee through the Architect/Engineer. A Bidder must give seven (7) days advanced notice if copies are desired.

D. Specifications, submittals and other documents that may include information on existing conditions, including previous construction at Project site, are no longer available.

E. The Contract Drawings have been prepared using certain existing construction documents furnished by the Owner, which pertain to the construction of the existing conditions and limited observations obtained by the Architect at the Project site.
   1. More extensive investigations of existing conditions, including disassembly or testing of existing building components, was not undertaken by the Architect. Portrayal of such existing conditions obscured or concealed from the Owner or Architect’s view prior to start of this Project’s construction activities, is based on reasonable implications and assumptions. The Owner and Architect do not imply or guarantee, in any way, that such portrayals are accurate or true existing conditions.
   2. Contract Drawings represent locations and character of identified existing structures and facilities apt to be encountered or located in such proximity to the Work as to require precautions for protection. The sizes, materials, locations and depths shown are only approximate. Prime Contractor performing such Work shall investigate himself as to the accuracy and completeness of such information. Prime Contractor shall not be relieved from any obligations, nor be entitled to claim for damages or additional compensations, sustained or a rising out of inadequacy or inaccuracy of the information provided.

F. Related Requirements:
   1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
   2. Document 003126 "Existing Hazardous Material Information" for reports of ACM Sampling & Laboratory Analysis that are made available to bidders.

END OF DOCUMENT 003119

EXCEPT FOR ABOVE REFERENCED ITEMS WHICH FOLLOW

003119.1

EXISTING 3' B.W. FENCE

PROPERTY LINE

I.P.

OLD WOODEN FENCE POSTS

BASE LINE

DO NOT DISTURB

RETAINING WALL
SECTION X-X

TRUE NORTH

TYPICAL MANHOLE DETAIL
SCALE 3/4"=1'-0"

TYPICAL PAVING DETAILS
SCALE 1½"=1'-0"

TYPICAL CURB DETAIL
SCALE 1"=1'-0"

TYPICAL CATCH BASIN DETAIL
SCALE 1½"=1'-0"

TYPICAL TERRACE WALL AND SIDEWALK
SCALE ¾"=1'-0"

NEW YORK STATE CONC. MONUMENT

POINT OF BEGINNING

GRAVEL FILLED INTERCEPTING DRAIN DITCH

6" COR. IRON PERF. DRAIN PIPE

PIPE INVERT EL 416.0

4'x4' CATCH BASIN Bot. El. 413.0

PIPE INVERT EL 416.0

TOP OF LOW END ELEV 419.0

TOP OF RET. WALL EL 422.0

LEVEL AT 417.0

SLOPE TO TOP OF WALL

5" BITUMINUS PAVING

CURB

PARKING

CONC. SIDEWALK

SODDED AREA

GRADE AT BLDG. 419.0

SODDED TERRACE

GRADE AT BLDG. 421.33

TOP OF WALL 421.0

TOP OF WALL 421.3

TOP OF WALL 419.5

TOP OF WALL EL. 419

CONC. APRON

TRANSFORMER PAD

BOILER RM. FL. EL 417.5

FIN. FLOOR EL. 420.0'

CONC. CURB

CONC. BASEMENT WALL

1½" BITUMINUS PAVING

ELECTR. HAND HOLE

REGRADE

MEAS. 283.33 I.P. TO I.P.

S 28° 48' W

PROPERTY LINE

HAND SHOULDER

2" BITUMINUS PAVING

HAND SHOULDER

50'-0" ROADWAY

22'-0" ROADWAY

VENNER AVENUE

416.81

EXISTING ASPHALT CONC. PAVEMENT

DO NOT DISTURB
EXISTING GRADES

CONC. CURB

HAND SHOULDER

P.O.W. MARKE STA. 5+00

50'-0" ROADWAY

NEW YORK STATE ROUTE 5-W

EXISTING EL. INV. 412.97
S. INV 413.22

EXIST. 24" Ø

SAN. M.H.

GAS. VALVE

N.M.& N.Y.T. POLE

HYDT.

N.Y. STATE CONC. MARKER

GOLF FUTURE ACCESS ROAD

8" BIRCH

6" BIRCH

4-6" BIRCHES

6" DOUB. BIRCH

SAPLING

10" ASH

18" MAPLE

6" ASH

3-8"&10" DOUBLE POPLAR

STORM WATER CONCRETE CUT TAIL

8" ELM

6" BALSAM

6" BIRCH

12-12" CHERRY

3-8" MAPLE

16" BIRCH (PROTECT FROM DAMAGE)

MARBLE CHIPS

FLAG POLE

REMOVE EXISTING 18" CONCRETE CULVERT AND SAVE TO REUSE

No	DATE	REVISION	BY	CHK	APPR
4	5-13-66	RETAINING WALL DETAIL	HB		
3	4-28-66	ADDENDUM NO 3	AD		
2	3-31-66	SPECIFICATION FOR 24" CULVERT CLARIFIED	A-D		
1	3-28-66	PER ADDENDUM NO. 1	A-D		

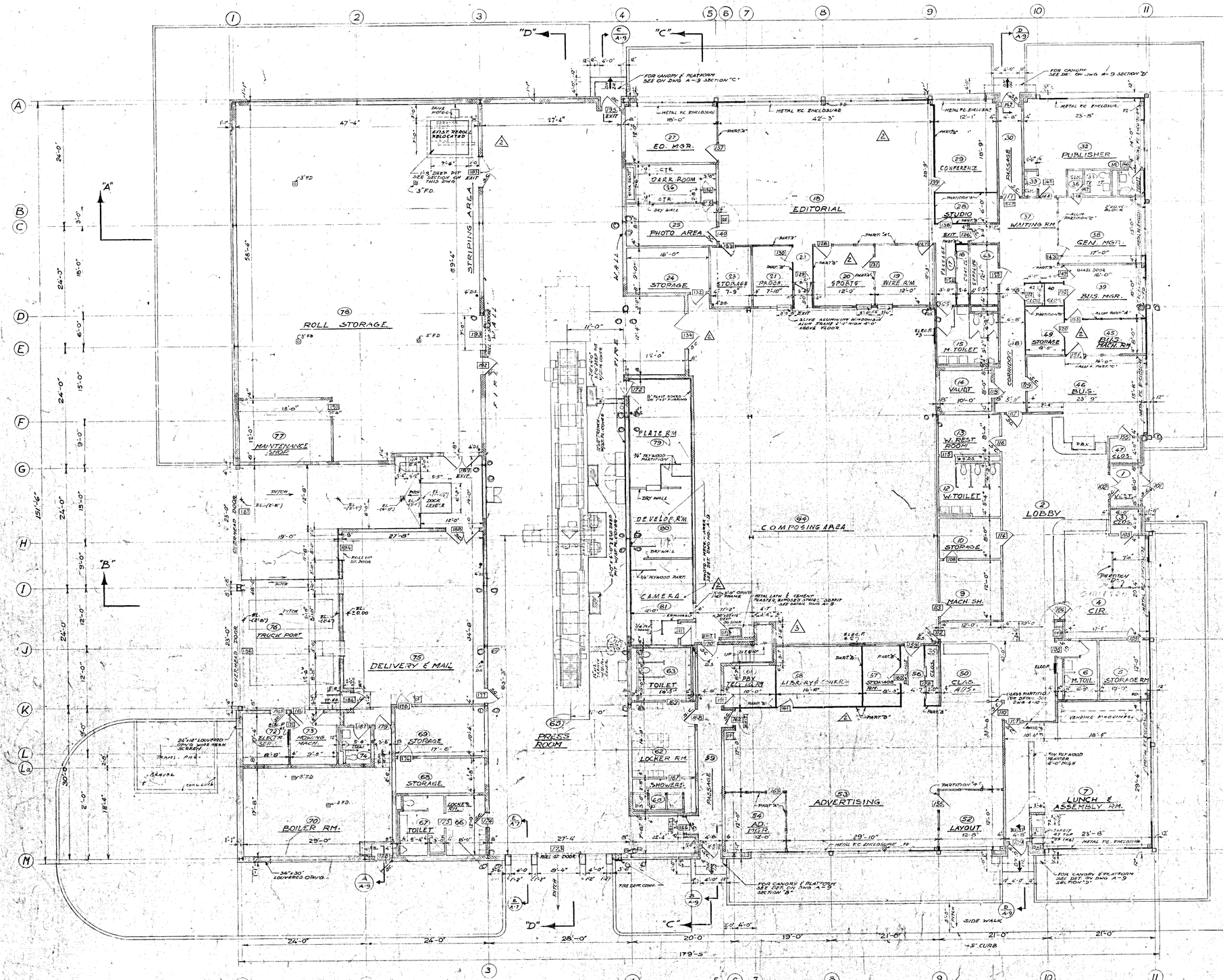
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

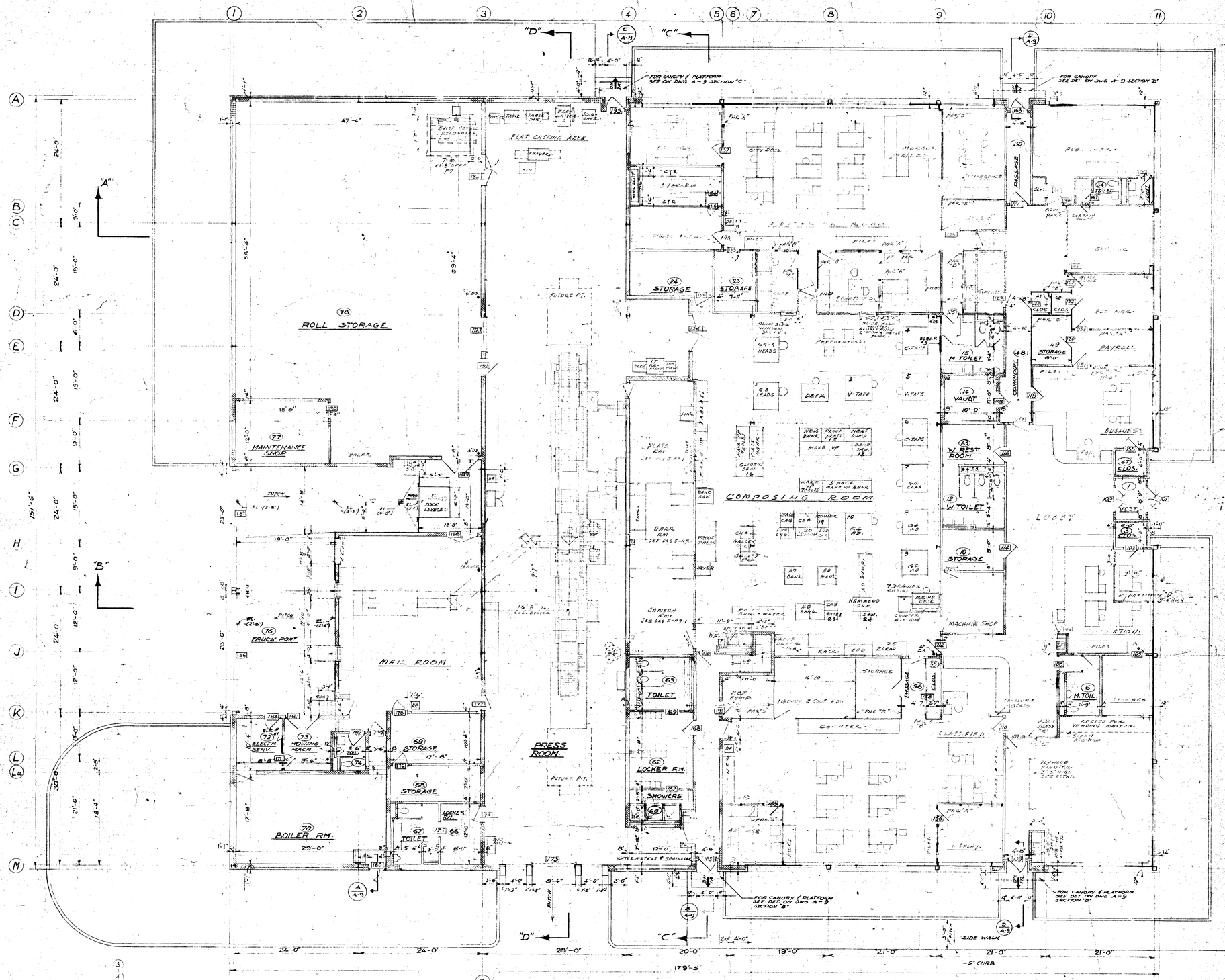
PLOT PLAN

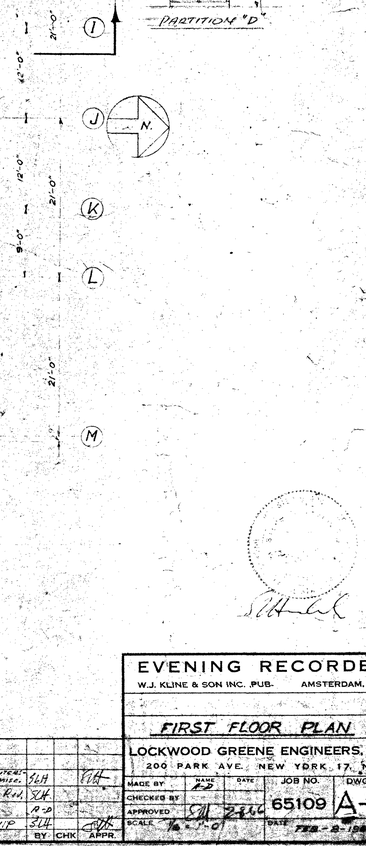
LOCKWOOD GREENE ENGINEERS, INC.
205 PARK AVE. NEW YORK 17, N.Y.

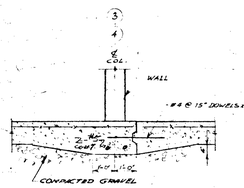
MADE BY	NAME	DATE	JOB NO.	DWG. NO.
	A.A.P.	12-30-65	65109	A-1
CHECKED BY				
APPROVED				
SCALE	1" = 20'-0"	DATE	FEB-8-1966	

3' B.W. FENCE
I.P.
N. 25° - 31' E
278.18'
I.P.
N. 23° - 31' E. 65.4
I.P.
S. 88° 45' E
21.5'
I.P.
OLD WOODEN FENCE POSTS
N. 60° - 13' E
NORTH
TRUE
62 - 8" AVE. DIA. H.W
22 - 8" AVE. DIA. S.W
35 - 8" AVE DIA. H.W
418.1
8" ELM
8" BALSAM
418.6
424.7
420.3
427.5
20 - 6" AVE. DIA. S.W
60 - 8" AVE. DIA. H.W
421.8
422.9
POND
422.4
NEW YORK STATE CONC. MONUMENT
POINT OF BEGINING
I.P.
420.5
420.7
4" BIRCH
421.8
R.O.W. MARKER STA. 5+00
2-1" CHERRY
3-1" MAPLE
420.3
420.6
2-1" SAP
8-12" BIRCH
N. 64° - 26' W
492.77'
8" BIRCH
4-6" BIRCH
417.2
8" DOUBLE BIRCH
6" SAPLING
410
405
400
395
10" ASH
8" POPLAR
8" POPLAR
418.2
18" MAPLE
6" DOUBLE POPLAR
6" ASH
8" & 10" DOUBLE POPLAR
S. 25° - 30' W 251.5'
POINT OF BEGINNING
I.P.
50' R.O.W. ACCESS ROAD
SEMI-LANDS OLD FENCE LINE
N. 0° - 12' W 495.08
BORING NO. 4
BORING NO. 2
PROPOSED BUILDING
BORING NO. 1
BORING NO. 5
BORING NO. 3
150.0
115.5'
179.5'
180'
415.3
100'
417.6
418.3
S. 28° - 48' W 280.46
100' ±
I.P. 2' NORTH OF P.L.
P.M. 3
ELEV. 418.89
PK NAIL & STONE IN BASE
CUT IN 3 BASE OF 20" MAPLE
417.3
415
420
NEW YORK STATE ROUTE 5-S
12" CORR. I.P. CULV.
W. INV. 416.27
E. INV. 415.69
N. INV. 415.97
S. INV. 415.72
N.N. DOLE & HYD.
HYDT.
N.N. & HYD. POLE
N.N. & HYD. POLE
12" C.I. 65-70 PSI WATER MAIN
WEST EDGE OF ROAD
VENNER AVENUE
EXISTING ASPHALT CONC. PAVEMENT
8" INTERMEDIATE PRESSURE GAS MAIN
EAST EDGE OF ASPHALT PAVEMENT
GAS VALVE
SAN. MH.
NY STATE CONC. MARKER
12" OFF P.L.
8" STORM SEWER GRAVITY FLOW
SAN SEWER ROAD TOP 415
INVT INVT 398.49
8" C.I. FORCE PUMP SAN SEWER 0.86% TO M.H. N OF S-5
(M.H.)
ELEVATIONS - VERTICAL DATUM APPROX. 1929 MEAN SEA LEVEL BASED ON SPOT E.L. OF 401 FOR CENTER LINE INTERSECTION OF MINAVILLE STREET. ELEVATIONS FROM U.S.G.S. 7½ MINUTE QUADRANGLE, AMSTERDAM (1954) EDITION.
TOPOGRAPHY FROM SARGENT-WEBSTER-CRENSHAW & FOLLEY PHOTOGRAMMETRIC MAP DATED 8-18-58 FOR INDUSTRIES FOR AMSTERDAM, INC.
PROPERTY LINES FROM SURVEY BY WILFRED W. CHURCHETT L.L.S. #35601 DATED JUNE 22, 1965
18 15 90 18 22 Nov.
1 3-28-66 PER ADDENDUM NO. 1. A.D.
NO. DATE REVISION BY CHK APPR.
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.
SURVEY
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.
MADE BY A.A.P. DATE 2-8-66
CHECKED BY
APPROVED 3-9-66
SCALE 1" = 20'-0"
JOB NO. 65109
DWG. NO. A-2
DATE FEB. 8, 1966

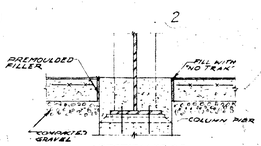

ROLL STORAGE
STRIPING AREA
MAINTENANCE SHOP
TRUCK PORT
DELIVERY & MAIL
BOILER RM.
PRESS ROOM
PLATE R'M
DEVELOP R'M
CAMERA
COMPOSING AREA
EDITORIAL
ED. MGR.
DARK ROOM
PHOTO AREA
STOPAGE
STORAGE
PROOF
SPORTS
WIRE R'M
CONFERENCE
STUDIO
WAITING RM
PUBLISHER
GEN. MGR.
BUS. MGR.
BUS. MACH. RM
M. TOILET
VAULT
W. REST ROOM
W. TOILET
STORAGE
MACH. SH.
LOBBY
CIR.
VEST.
PARROTTY
BUS.
CLOS.
LIBRARY & MORGUE
TELEPHONE RM.
TOILET
LOCKER RM.
SHOWERS
ADVERTISING
AD. TAKER
LAYOUT
LUNCH & ASSEMBLY RM.
M. TOIL.
STORAGE RM.
VENDING MACHINES
PASSAGE
FIRE
"A"
"B"
"C"
"D"
47'-4"
27'-4"
179'-5"
+5' CURB
SIDE WALK
FOR CANOPY & PLATFORM SEE DET. ON DWG A-9 SECTION "C"
FOR CANOPY SEE DET. ON DWG A-9 SECTION "D"
FOR CANOPY & PLATFORM SEE DET. ON DWG A-9 SECTION "D"
METAL PC. ENCLOSURE
METAL PC. ENCLOSURE 18'-0"
METAL PC. ENCLOSURE 42'-3"
METAL PC. ENCLOSURE 12'-1"
METAL PC. ENCLOSURE 23'-8"
METAL PC. ENCLOSURE 29'-10"
METAL PC. ENCLOSURE 25'-8"
ALUM. PARTITION "C"
GLASS PARTITION SEE DETAIL SH. 3 ON A-10
EXIST. BRICK RELOCATED
EXIST. BRICK WALL
DRIVE NOTCH
3" F.D.
5" F.D.
DEEP PIT SEE SECTION ON EXIT THIS DWG.
ROLL UP OIL DOOR
OVERHEAD DOOR
24"x18" LOUVERED OPNG. WIRE MESH SCREEN
36"x30" LOUVERED OPNG.
ROOF SCUTTLE
ROOF HATCH
SKYLIGHT
ELECT'R SER.
TRANSF. PAD
CANAL
COAL CHUTE
FIRE DEPT. CONN.
EXPANSION JOINT
CONTROL JOINT
PITCH
EL. (2'-0")
EL. (1'-7")
EL. (2'-8")
EL. (2'-6")
EL. ±0.00
EL. (1'-6")
EL. (2'-10")
EL. (2'-7")
EL. (2'-4")
EL. (2'-1")
EL. (1'-11")
EL. (1'-8")
EL. (1'-5")
EL. (1'-2")
EL. (0'-11")
EL. (0'-8")
EL. (0'-5")
EL. (0'-2")
EL. (-0'-1")
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EL. (-0'-7")
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EL. (-2'-6")
EL. (-2'-9")
EL. (-3'-0")
EL. (-3'-3")
EL. (-3'-6")
EL. (-3'-9")
EL. (-4'-0")
EL. (-4'-3")
EL. (-4'-6")
EL. (-4'-9")
EL. (-5'-0")
EL. (-5'-3")
EL. (-5'-6")
EL. (-5'-9")
EL. (-6'-0")
EL. (-6'-3")
EL. (-6'-6")
EL. (-6'-9")
EL.



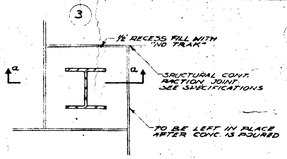




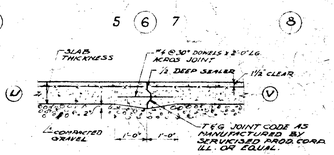
TYPICAL UNDER 8" WALL
NO SCALE



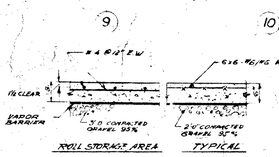
SECTION "a-a"



TYPICAL PLAN AT INTERIOR COL.
SCALE: 1" = 1'-0"



TYPICAL CONSTRUCTION JOINT
(NO SCALE)
Note: SEE SPECIFICATION FOR POUR LIMITATIONS ALLOW 7 DAYS BETWEEN SECTIONS U & V



CONC. FLOOR SLAB DETAIL
SCALE: 1/8" = 1'-0"

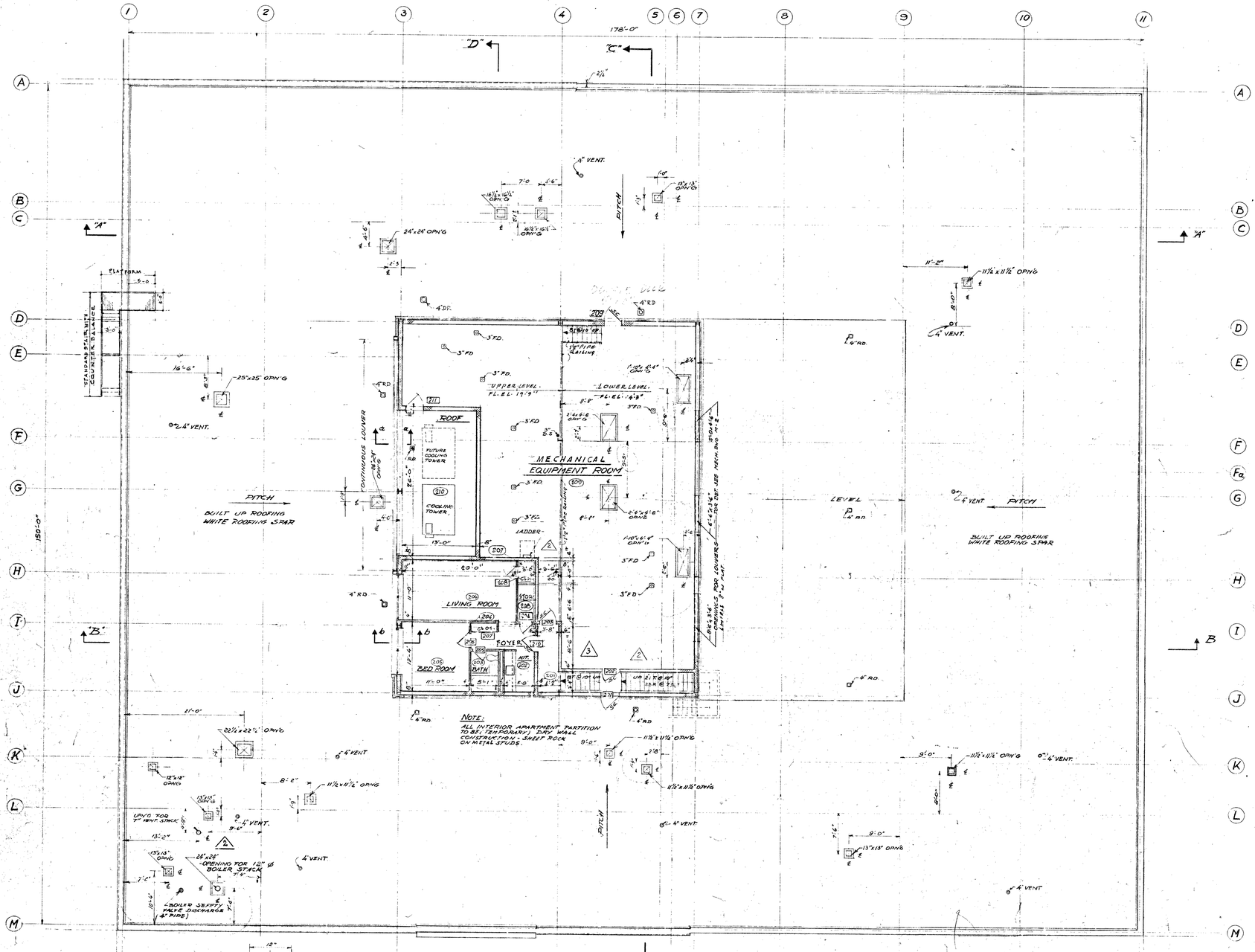
No	DATE	REVISION	BY	CHK	APPR.
4	9-26-66	PLATE CASTING AREA - TO MYRTLE - FILLED AREA, RAMP, CURB & MISC.	SLH		
3	6-7-66	Added Ramp 10" Bottom Rail	SLH		
2	5-6-66	STAIRS CORRECTION	R.D.		
1	4-19-66	ADDED PRODUCTION EQUIP.	SLH		

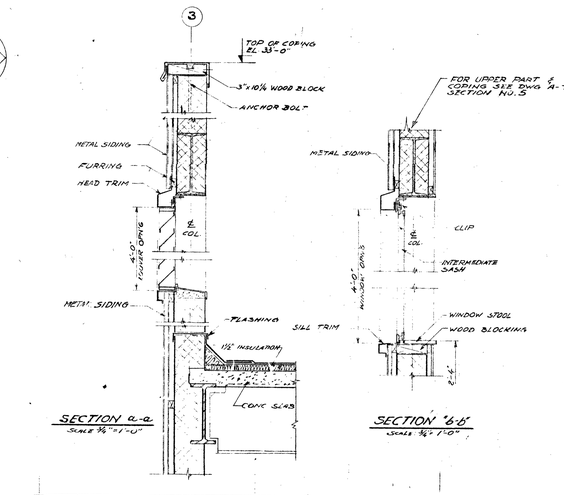
EVENING RECORDER.
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

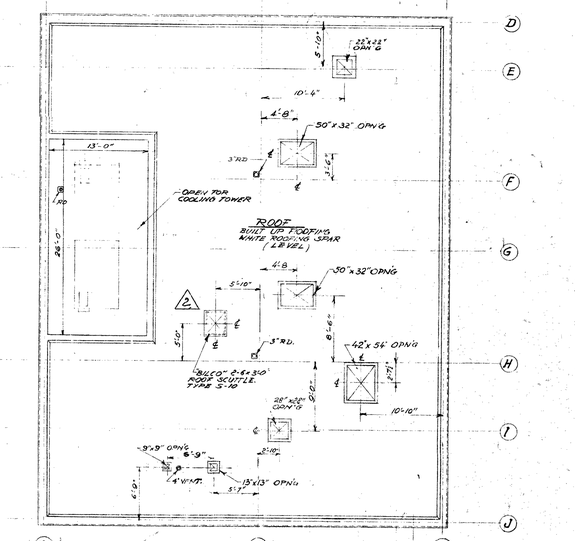
FIRST FLOOR PLAN

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME R.D.	DATE	JOB NO. 65109	DWG. NO. A-3E
CHECKED BY				
APPROVED	SLH	2-4-66		
SCALE 1/8" = 1'-0"			DATE FEB - 2 - 1966	

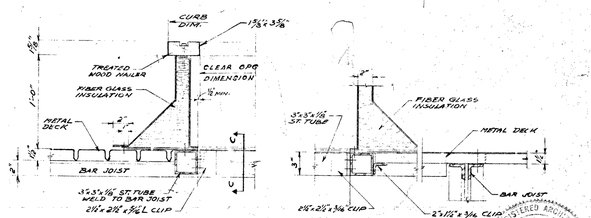






PENTHOUSE ROOF PLAN

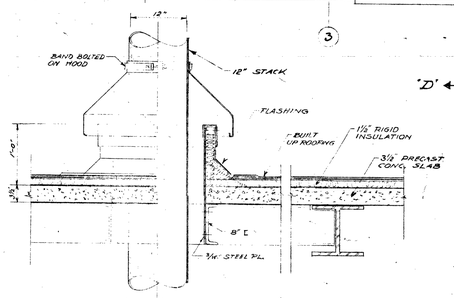
SCALE: ⅛" = 1'-0"



TYPICAL CURB DETAIL

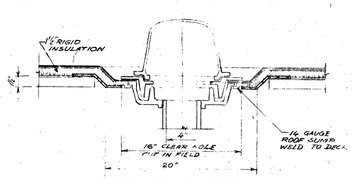
SCALE: 1½" = 1'-0"

(SWARTWOUT "INSTA" CURB SERIES "A")



BOILER STACK

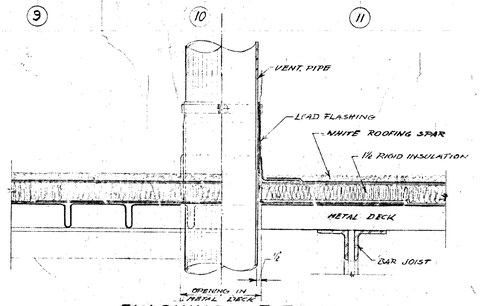
SCALE: 1"= 1'-0"



ROOF DRAIN DETAIL

FOR ZURN Z-115 SERIES WITH ROOF SUMP RECEIVER

SCALE 1½" = 1'-0"



FLASHING FITTING

SCALE: 3"= 1'-0"

NO	DATE	REVISION	BY	CHK	APPR.
4	6-24-66	Roof opening, flanges with Steel	TJH		
3	5-6-66	STAIR CORRECTION	A-D		
2	4-18-66	ADDENDUM NO 3	A-D		
1	3-18-66	PER ADDENDUM NO. 1	A-D		

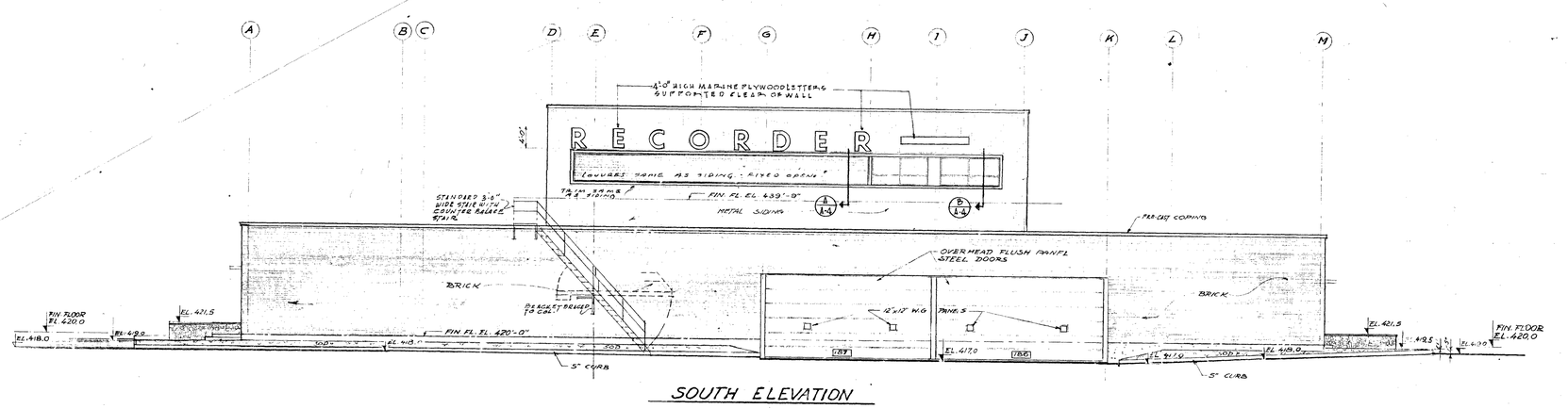
EVENING RECORDER
W.J. KLINE & SON INC. ,PUB- AMSTERDAM, N.Y.

ROOF & PENTHOUSE PLAN

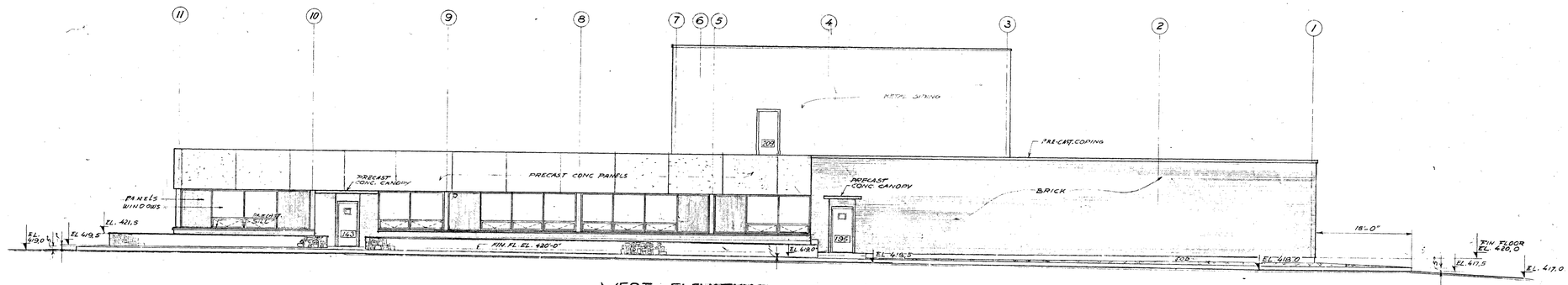
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

	NAME	DATE
MADE BY	JKD	2-8-66
CHECKED BY		
APPROVED		4/8/66
SCALE	1/8"=1'-0"	
DATE		

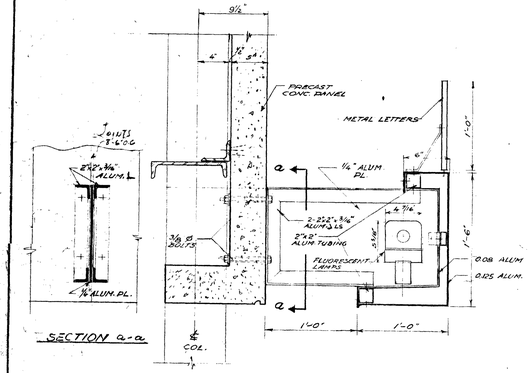
JOB NO. 65109
DWG. NO. A-4
FEB-8-1966



SOUTH ELEVATION

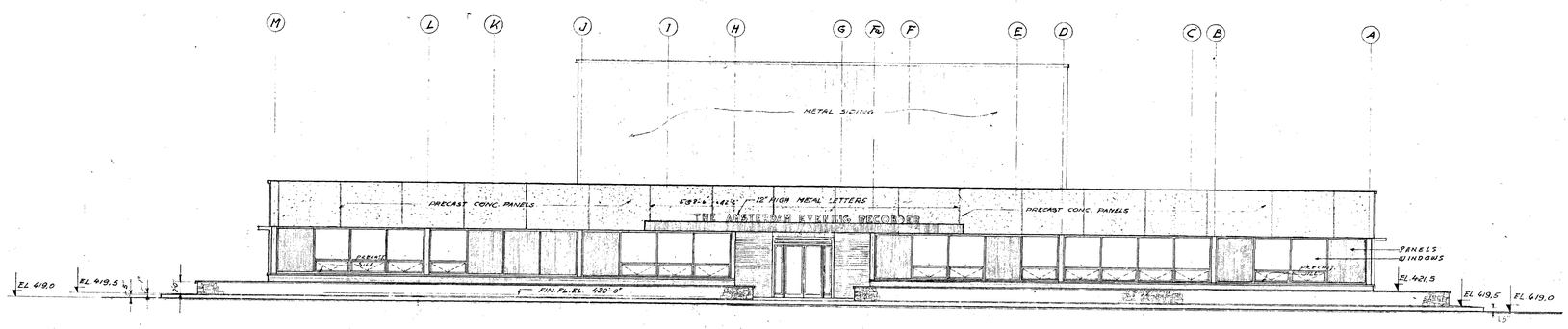


WEST ELEVATION

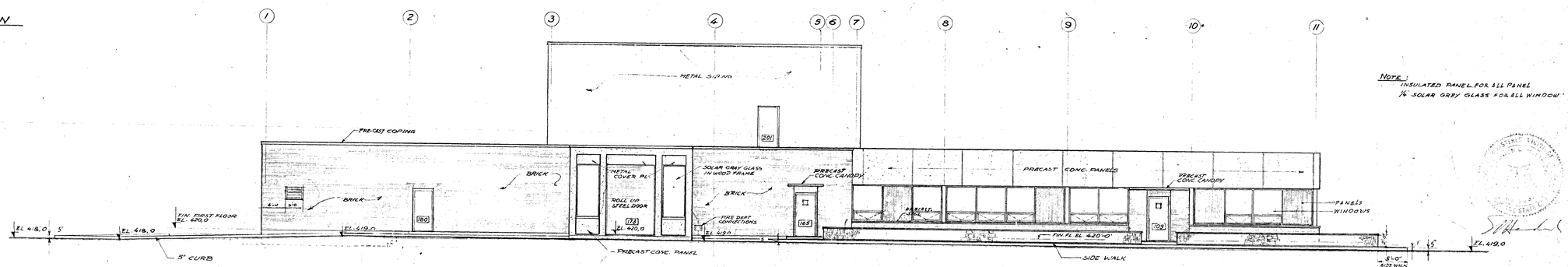


SECTION a-a

BACK LIGHTED SIGN
SCALE : 1½" = 1'-0"



NORTH ELEVATION



EAST ELEVATION

Note :
INSULATED PANEL FOR ALL PANEL
¼ SOLAR GREY GLASS FOR ALL WINDOW

No	DATE	REVISION	BY	CHK	APPR.
2	6-30-66	LOUVER & BRICK LH. SIGN 3'x7'6"	SLH	SLH	
1	3-29-66	PER ADDENDUM NO. 1	A-D	SLH	

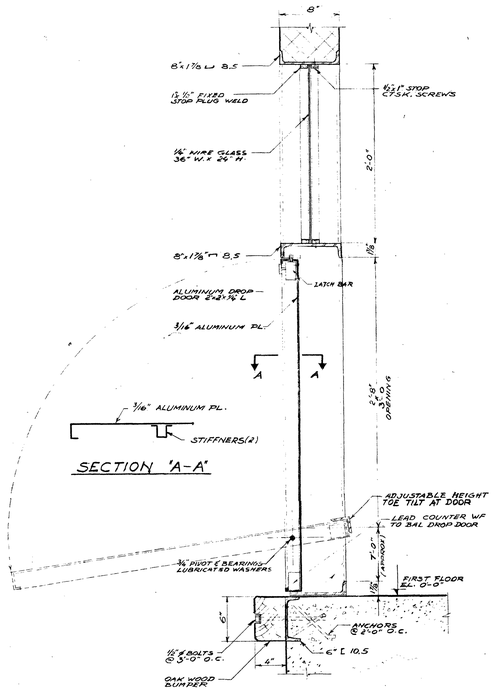
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

ELEVATIONS

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

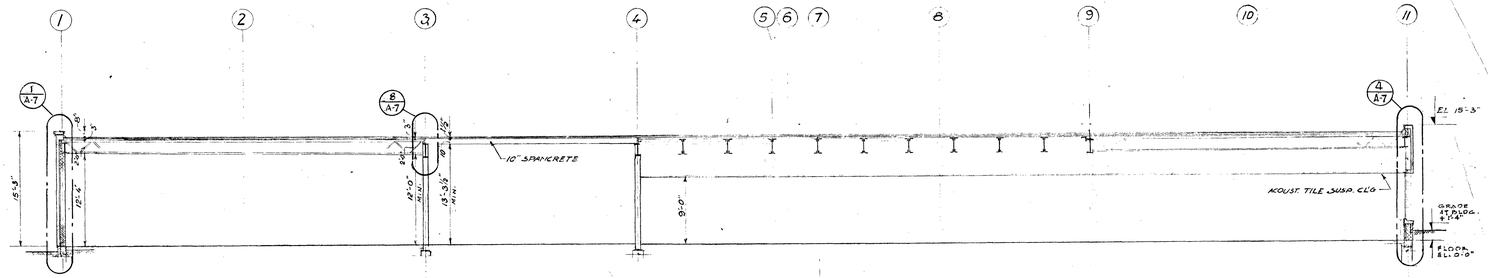
	NAME	DATE
MADE BY	A-D	
CHECKED BY		
APPROVED		2/8/66
SCALE	1/8" = 1'-0"	

JOB NO. 65109
DWG. NO. A-5
DATE FEB.-8.-1966.

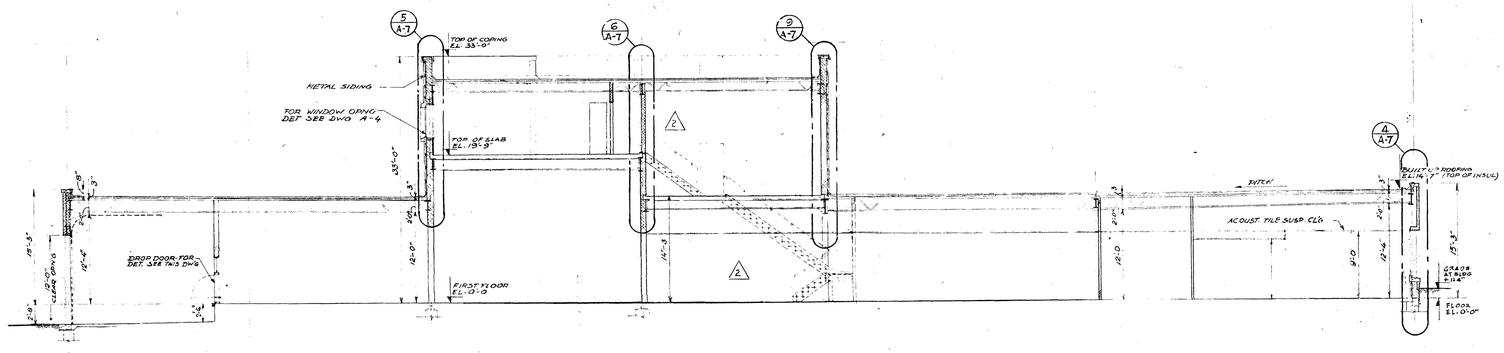


DROP DOOR

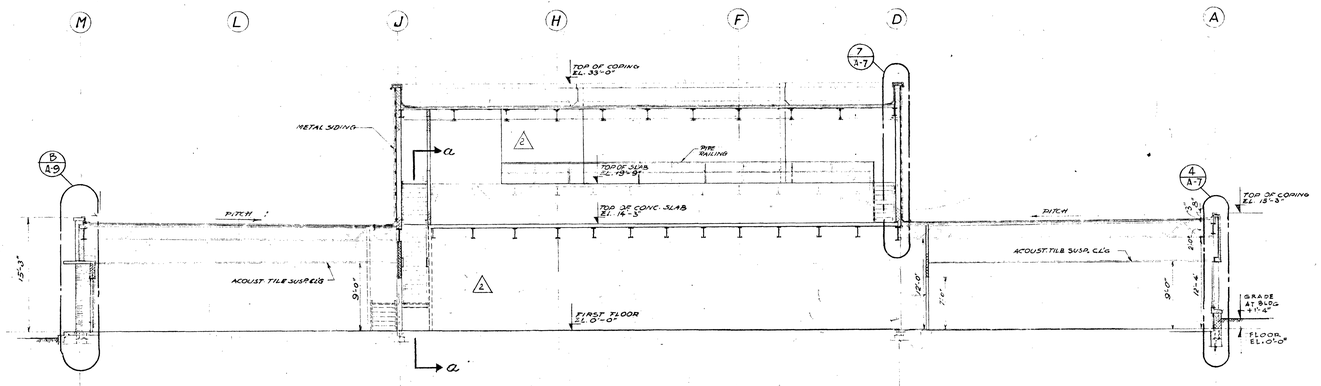
SCALE: 1/2" = 1'-0"
(DELIVERY DOCK)



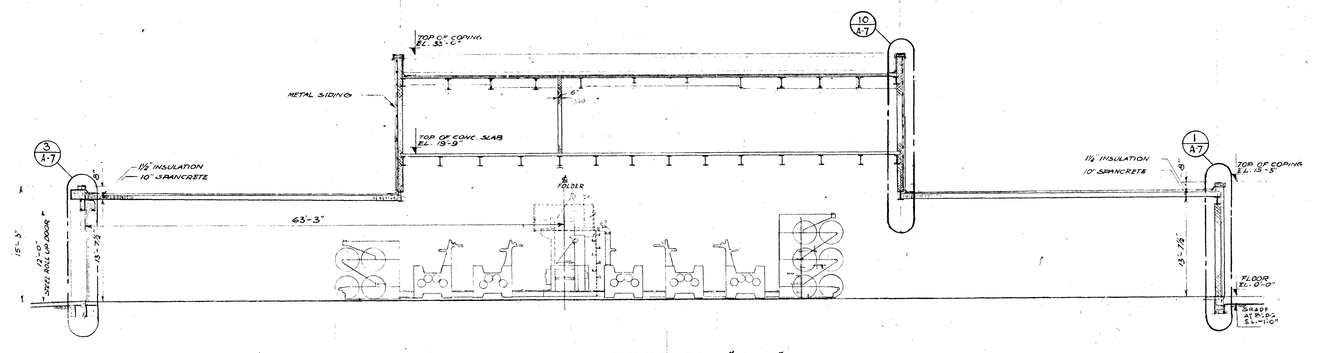
SECTION 'A-A'



SECTION 'B-B'

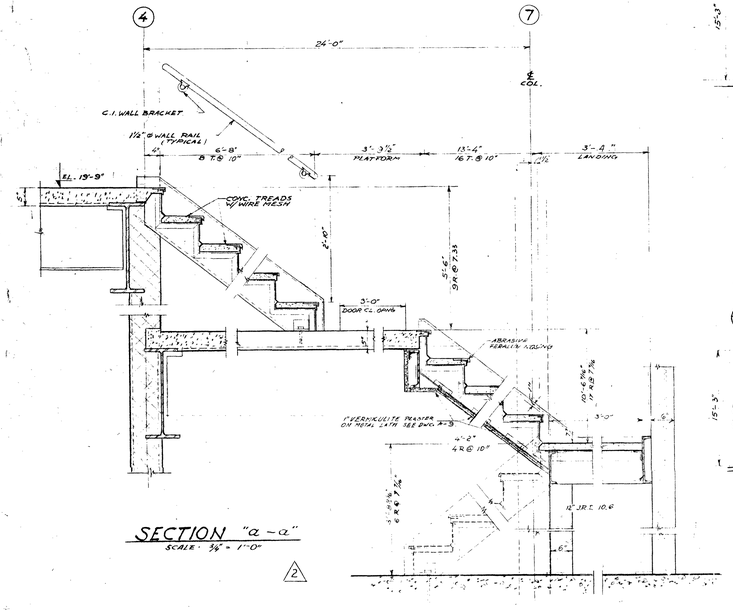


SECTION 'C-C'



SECTION 'D-D'

(THRU PRESS ROOM)



SECTION "a-a"

SCALE: 3/8" = 1'-0"

2

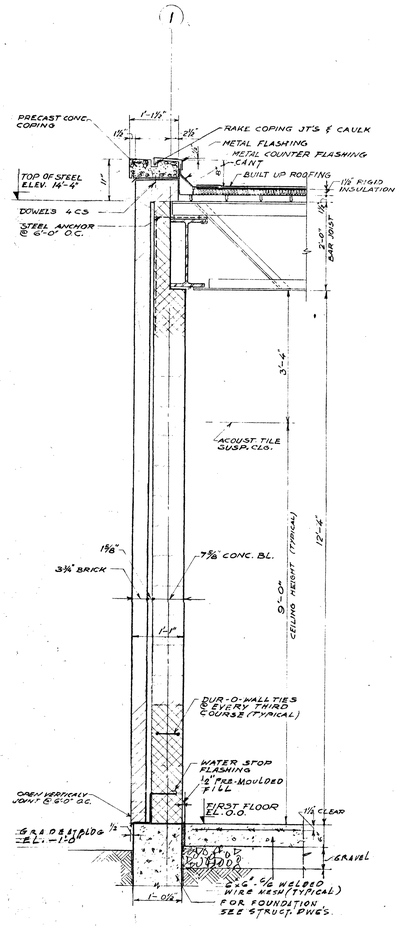
EVENING RECORDER
W.J. KLINE & SON INC. ,PUB. AMSTERDAM, N.Y.

SECTIONS

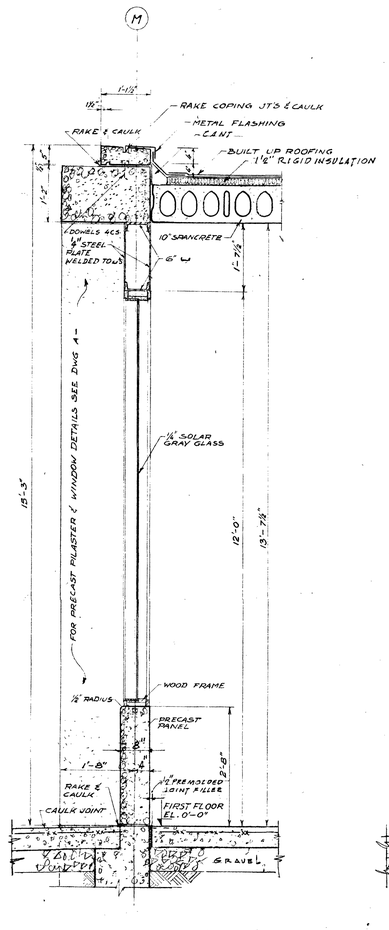
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME	DATE	JOB NO.	DWG. NO.
CHECKED BY	A.D.	2-8-66	65109	A-6
APPROVED				
SCALE	1/8"-1'-0" OR AS SHOWN		DATE	FEB. 8, 1966

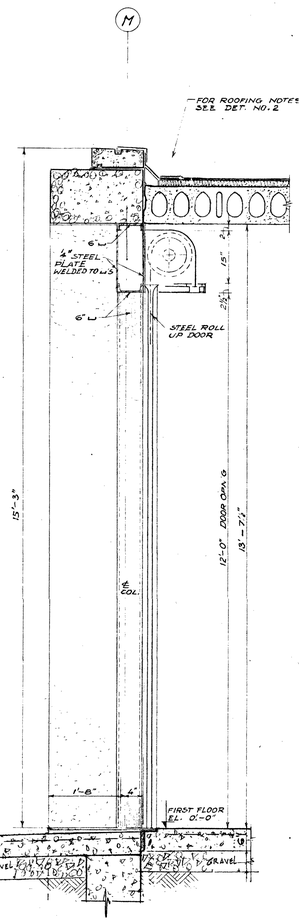
No	DATE	REVISION	BY	CHK	APPR.
2	5-6-66	STAIRS CORRECTION	B-B		
1	3-18-66	PER ADDENDUM NO. 1.	B-D		



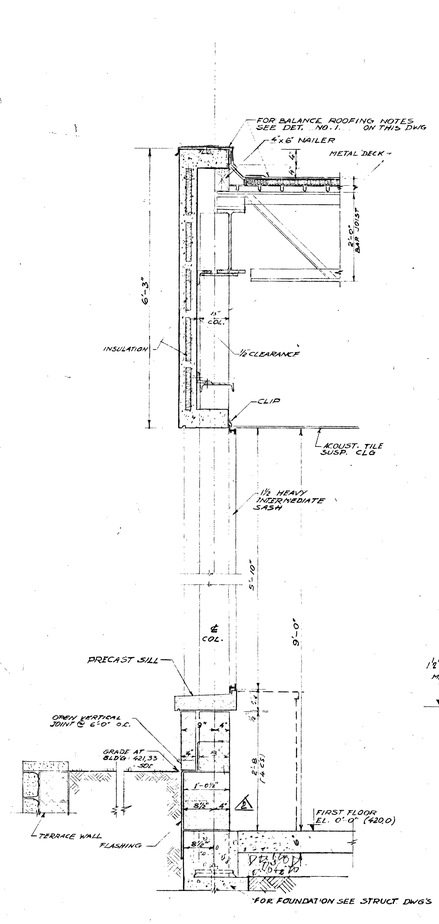
SECTION (1 / A-6)



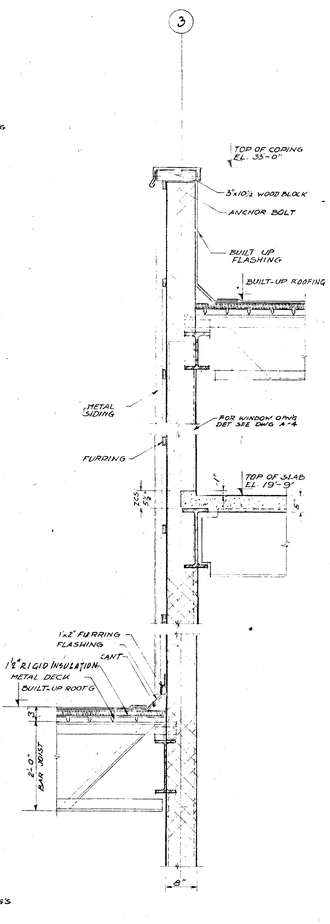
SECTION (E / A-3)



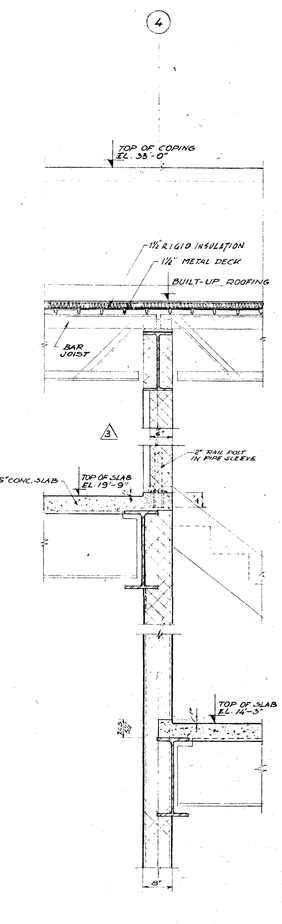
SECTION (3 / A-6)



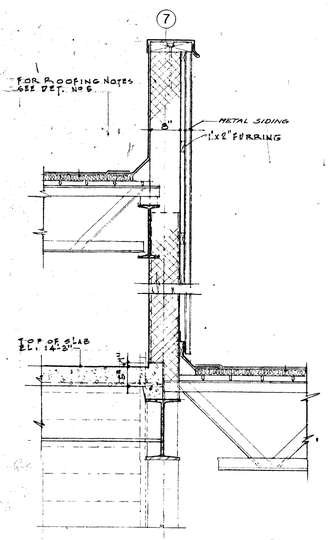
SECTION (4 / A-6)



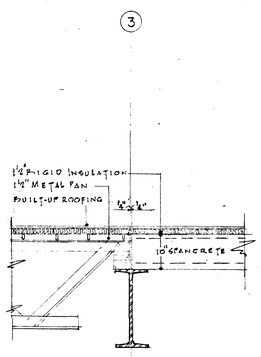
SECTION (5 / A-6)



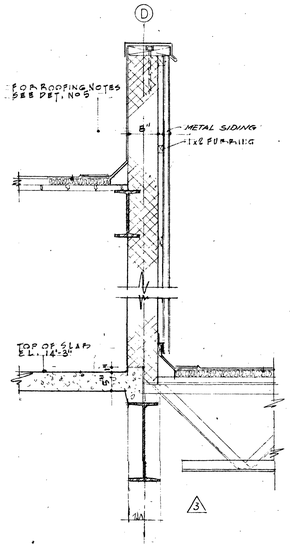
SECTION (6 / A-6)



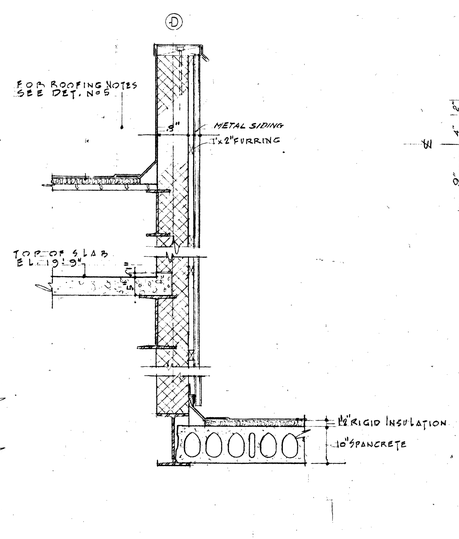
SECTION (7 / A-6)



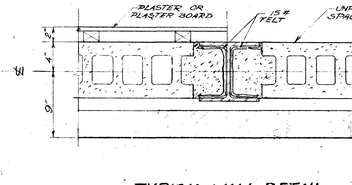
SECTION (8 / A-6)



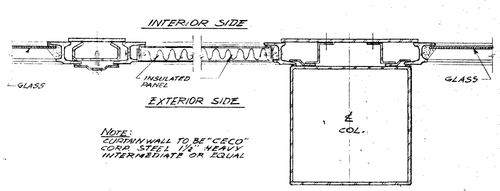
SECTION (9 / A-6)



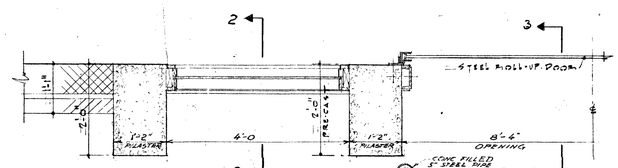
SECTION (10 / A-6)



TYPICAL WALL DETAIL
SCALE: 1½" = 1'-0"



SECTION OF TYPICAL WINDOW WALL
SCALE: 3" = 1'-0"



PART PLAN OF WINDOW AND DOOR 173
SCALE ¾" = 1'-0"

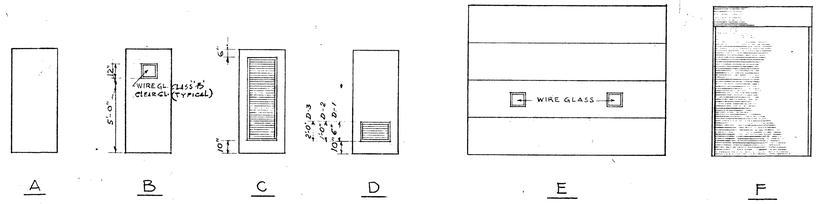
No	DATE	REVISION	BY	CHK	APPR.
3	5-6-66	STAIRS CORRECTION	A.D.		
2	4-28-66	ADDENDUM NO 3	A.D.		
1	3-28-66	PER ADDENDUM NO. 1.	A.D.		

EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

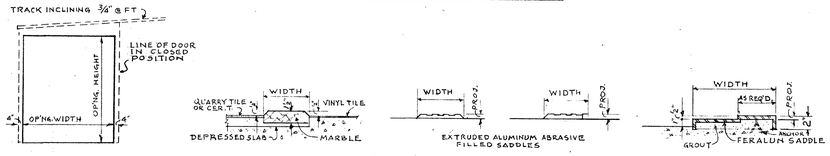
WALL SECTIONS & DETAILS

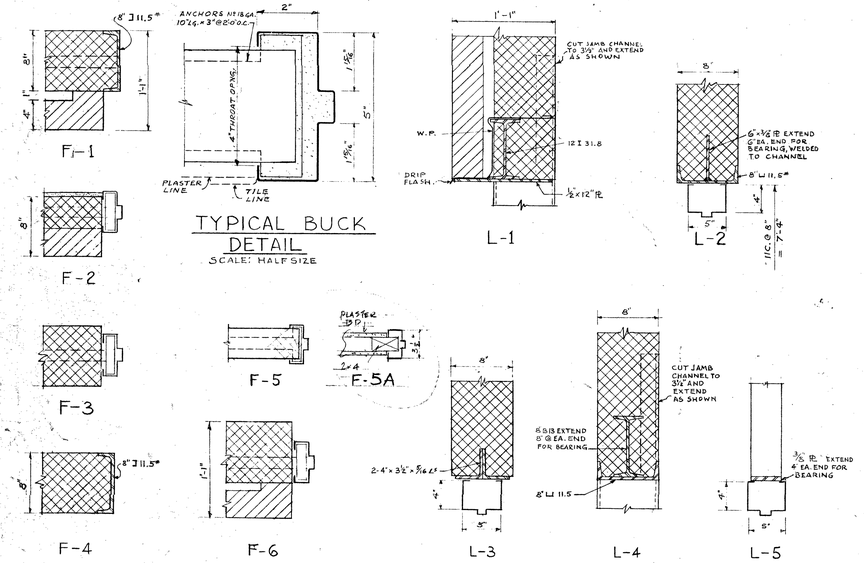
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

	NAME	DATE	JOB NO.	DWG. NO.
MADE BY	A.D.		65109	A-7
CHECKED BY				
APPROVED		2/3/66		
SCALE ¾" = 1'-0" OR AS SHOWN			DATE	FEB. - 8 - 1966.



DOOR TYPES





LEGEND

BR.	— BRICK
C.B.	— CONCRETE BLOCK
CER.T.	— CERAMIC TILE
CLG.	— CEILING
DET.	— DETAIL
EL.	— ELEVATION
FER.	— FERALUN
FLO.C.	— FLOAT CONCRETE
GL.	— GLASS
GLAZ.T.	— GLAZED TILE
G.M.C.	— GRANOLITHIC MONOLITHIC CONCRETE
H.M.	— HOLLOW METAL
MAR.	— MARBLE
M.CONC.	— MONOLITHIC CONCRETE
M.P.	— METAL PARTITION
P.C.B.	— PAINTED CONCRETE BLOCK
PLAS.	— PLASTER
PL.B.	— PLASTER BOARD
Q.T.	— QUARRY TILE
RUB.	— RUBBER
S.A.T.	— SUSPENDED ACCOUST.C TILE
S.C.B.	— SPRAYED CONCRETE BLOCK (LIQUID TILE) SEE SPECIFICATION SECTION 31
T.	— TILE
W.	— WINDOW OR WINDOW WALL
G.F.	— GRAIN. FINISH. TO MATCH WOOD WORK
B.O.	— FLOOR COVERING BY OWNER.

NOTE:
ALL DOORS TO BE 1 LEAF SWING H.M. 3'-0" x 7'-0" x 1¾" WITH H.M. FRAME EXCEPT AS NOTED.

DOOR SCHEDULE

RM. Nº	DOOR Nº	TYPE	DESCRIPTION	MAT.	DOOR SIZE WIDTH	DOOR SIZE H'GHT	DOOR SIZE THICK.	OPENING WIDTH	OPENING H'GHT	SADDLE MAT.	SADDLE TYPE	SADDLE WIDTH	SADDLE PR.O.J.	FRAME TYPE	FRAME WIDTH	FRAME MAT.	LINTEL	FIRE RATING	HARD-WARE	REMARKS
1	101	EXTER.	2 LEAF SWING	ALUM.	5'-0"	7'-0"		—	—	ALUM.	S-2	8"	½"	—	—	ALUM.	—			SEE DETAIL "B" DWG A-10
2	102		2 LEAF SWING	ALUM.	5'-0"	7'-0"		—	—	ALUM.	S-2	4"	½"	—	—	ALUM.	—			SEE DETAIL "B" DWG A-10
3	103	A	—	—	2'-6"	7'-0		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
4	104		GATE	—	2'-0	6'-10"		—	—	—	—	—	—	—	—	—	—			SEE DWG. A-10
5	105	D-2	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
6	106	D-2	—	—	2'-6"	7'-0"		—	—	MAR.	S-1	4"	½"	F-5	—	—	L-5			G.F.
7	107		—	ALUM.	3'-0"	7'-0"		—	—	ALUM.	S-2	4"	½"	—	—	ALUM.	—			SEE DETAIL "B" DWG A-10
10	108	D-2	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
8	109	B	—	—	—	—		—	—	ALUM.	S-2	8"	½"	F-2	—	—	L-5 OR L			SEE DETAIL "D" DWG A-9
53	110		—	ALUM.	3'-0"	7'-0"		—	—	ALUM.	S-1	4"	½"	—	—	ALUM.	—			SEE DETAIL "B" DWG - A-10
30	111	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
50	112	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR		CLASS "C" UNDERWRITERS (C.U)
9	113	D-3	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR.		CLASS "C" UNDERWRITERS
10	114	D-1	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
12	115	D-2	—	—	NO DOOR	—		3'-0	7'-0"	MAR.	S-1	4"	½"	—	—	—	—			TRIM OPENING
13	116	D-2	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
48	117	B	—	WOOD	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
14	118		VAULT DOOR	—	2'-8"	6'-6"		—	—	—	—	—	—	—	—	—	—			MOSLER-F.S-2-VAULT DOOR
46	119	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
49	120	D-1	—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
42	122		—	—	2'-6"	7'-0"		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
43	123	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
16	124		4 LEAF SLIDING	—	3'-0"	7'-0"		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
15	125	D-2	—	—	—	—		—	—	MAR.	S-1	4"	½"	F-5	—	—	L-5			
17	126	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
19	127		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
20	128 TO 134		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
22	129	B	DOUBLE SLIDING	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR.		CLASS "C" UNDERWRITERS
21	130		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
19	131	D-2	—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
24	132	D-2	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR.		CLASS "C" UNDERWRITERS
25	133	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
64	134	B	2 LEAF SLIDING	H.M.	7'-0"	7'-0"		—	—	—	—	—	—	F-3	—	—	L-3	1½ HR		CLASS "B" UNDERWRITERS
26	135	A	—	—	2'-0"	7'-0		—	—	—	—	—	—	F-5A	—	—	—			SEE DETAIL DWG. A-9
26	136	A	—	WD.	2'-6"	7'-0"		—	—	—	—	—	—	F-5A	—	—	—			IN 3" DRY WALL
27	137		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
28	138		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
29	139		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
25	140	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
31	141	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
30	142	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
38	143		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY MET. PART CONTRACTOR
32	144	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
33	145	A	—	H.M.	2'-6"	7'-0"		—	—	—	—	—	—	F-5	—	—	L-5			
35	146	D-1	—	H.M.	2'-0"	7'-0"		—	—	MAR.	S-1	4"	½"	F-5	—	—	L-5			
34	147	A	—	H.M.	2'-0"	7'-0"		—	—	MAR	S-1	4"	½"	F-5	—	—	L-5			
36	148	D-1	—	H.M.	2'-6"	7'-0"		—	—	—	—	—	—	F-5	—	—	L-5			
39	149	D-1	—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY MET. PART. CONTRACTOR
39	151		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY MET. PART. CONTRACTOR
40	152		—	H.M.	2'-6"	7'-0"		—	—	—	—	—	—	—	—	—	—			BY METAL PART CONTRACTOR
39	153		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
47	155	A	—	H.M.	—	—		—	—	—	—	—	—	F-5	—	—	L-5			G.F.
52	156		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
50	157		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
58	158		4 LEAF SLIDING	—	9'-0"	7'-0"		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
56	159	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR.		CLASS "C" UNDERWRITERS
57	160		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
58	161		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
53	162	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
54	163		—	—	—	—		—	—	—	—	—	—	—	—	—	—			BY METAL PART. CONTRACTOR
59	165	B	—	—	—	—		—	—	ALUM.	S-2	8"	½"	F-2	—	—	SEE DET.			SEE DET. "B" DWG A-9
55	166	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-3	1½ HR.		CLASS "B" UNDERWRITERS
60	167		—	—	NO DOOR	—		3'-0	7'-0"	MAR.	S-1	4"	½"	—	—	—	—			TRIM OPENING
62	168	D-1	—	—	—	—		—	—	MAR.	S-1	4"	½	F-5	—	—	L-5			
63	169		—	—	NO DOOR	—		3'-0	7'-0"	MAR.	S-1	4"	½"	—	—	—	—			TRIM OPENING
59	170	B	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5	¾ HR.		CLASS "C" UNDERWRITERS
73	171	A	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
64	172	B	—	—	—	—		—	—	—	—	—	—	F-3	—	CHANNEL	L-3	½ HR.		CLASS "B" UNDERWRITERS
65	173	F	ROLL UP DOOR	STEEL	TO FIT	OPENING		8'-0	12'-0"	—	—	—	—	SEE DET.	6"	CHANNEL	SEE DET.			SEE DET. - "B" DWG A-7
66	174	D-1	—	—	—	—		—	—	MAR.	S-1	4"	½"	F-3	—	—	L-3	1½ HR.		CLASS "B" UNDERWRITERS
67	175	D-2	—	—	NO DOOR	—		3'-0"	7'-0"	MAR.	S-1	4"	½"	—	—	—	—			TRIM OPENING
68	176	D-2	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
75	177	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-3	1½ HR.		CLASS "B" UNDERWRITERS
69	178	D-1	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
70	179	B	—	—	—	—		—	—	FER.	S-2	8"	½"	F-3	—	CHANNEL	L-3	1½ HR.		CLASS "B" UNDERWRITERS
70	180	A	—	—	—	—		—	—	FER.	S-4	13"	½"	F-6	—	—	SEE DET.			SEE DET. "A" DWG. A-9
73	181	C	2 LEAF SWING	H.M.	6'-0"	7'-0"	1¾"	—	—	—	—	—	—	F-3	—	—	L-3			
74	182	D-1	—	H.M.	2'-6"	7'-0"	1¾"	—	—	MAR.	S-1	8"	½"	F-5	—	—	L-5			
78	183	B	2 LEAF SWING	H.M.	7'-0"	7'-0"	1¾"	—	—	—	—	—	—	F-3	—	CHANNEL	L-5	1½ HR.		CLASS "B" UNDERWRITERS
74	184	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-3			
72	185	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-3	1½ HR		CLASS "B" UNDERWRIT.
76	186	E	OVERHEAD	H.M.	TO FIT	OPENING		23'-0	12'-0"	—	—	—	—	F-1	8"	CHANNEL	L-1			
76	187	E	OVERHEAD	H.M.	TO FIT	OPENING		23'-0"	12'-0"	—	—	—	—	F-1	8"	CHANNEL	L-1			
75	188	B	2 LEAF SWING	H.M.	7'-0"	7'-0"	1¾	—	—	—	—	—	—	F-3	—	—	L-3			
76	189	B	2 LEAF SWING	H.M.	7'-0	7'-0"	1¾	—	—	—	—	—	—	F-3	—	—	L-3	1½ HR		CLASS "B" UNDERWRITERS
77	190	D-1	—	—	—	—		—	—	—	—	—	—	F-5	—	—	L-5			
61	191	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-5			
65	192	B	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-3	1½ HR.		CLASS "B" UNDERWRITERS
65	193	F	ROLL UP DOOR	STEEL	TO FIT	OPENING		7'-0"	9'-0"	—	—	—	—	F-4	8"	CHANNEL	L-4	2 HR.		CLASS "B" UNDERWRITERS
75	194	F	ROLL UP DOOR	STEEL	TO FIT	OPENING		5'-0	7'-0	—	—	—	—	F-4	6"	CHANNEL	L-4	½ HR		CLASS "B" UNDERWRITERS
65	195	B	—	—	—	—		—	—	ALUM.	S-2	8"	½"	F-2	—	—	—			SEE DET. "C" DWG. A-9
210	211	A	—	—	—	—		—	—	ALUM.	S-3	8"	½"	F-3	—	—	L-3			8" CURB.
201	201	A	—	—	—	—		—	—	ALUM.	S-3	6"	½"	F-3	—	—	L-3			8" CURB.
209	202	A	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-5	½ HR.		CLASS "B" UNDERWRITERS
209	203	A	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-5	½ HR.		CLASS "B" UNDERWRITERS
208	204	A	—	—	2'-6	7'-0		—	—	—	—	—	—	F-5A	—	—	L-5			
203	205	D-1	—	—	2'-0"	7'-0"		—	—	MAR.	S-1	4"	½"	F-5A	—	—	L-5			
205	206	A	—	—	2'-6"	7'-0"		—	—	—	—	—	—	F-5A	—	—	L-5			
204	207	A	2 LEAF SLIDING	—	5'-0"	7'-0"		—	—	—	—	—	—	F-5A	—	—	L-5			
207	208	A	—	—	2'-6"	7'-0"		—	—	—	—	—	—	F-5A	—	—	L-5			
209	209	A	—	—	—	—		—	—	ALUM.	S-3	8"	½"	F-3	—	—	L-3			8" CURB
202	210	A	—	—	—	—		—	—	—	—	—	—	F-3	—	—	L-5			CLASS "B" UNDERWRITERS

ROOM FINISH SCHEDULE

ROOM Nº	ROOM NAME	FLOOR	BASE	WALLS NORTH	WALLS SOUTH	WALLS EAST	WALLS WEST	CEILING MATERIAL	CEILING HGT	REMARKS
1	VESTIBULE	RUB. MAT	—	DOOR	DOOR	BR.	BR.	S.A.T.	8'-0"	
2	LOBBY	B.O.	RUB.	WOOD	WOOD	WOOD	WOOD	S.A.T.	8'-0"	
3	CLOSET	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	EXP. CONC. SLAB	9'-0"	
4	CIRCULATION	B.O.	RUB.	MET.	WOOD	WOOD	WOOD	S.A.T.	9'-0	
5	STORAGE RM.	TUFTEX T.	RUB.	MET.	PLAS.	PLAS.	PLAS.	S.A.T.	9'-0"	
6	MEN'S TOILET	CER. T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	S.A.T.	8'-0"	
7	LUNCH & ASSEMBLY RM.	B.O.	RUB.	W/GLAS.	PLAS.	MET.	M/PLAS	S.A.T.	9'-0"	8'-0" CEILING VENDING MACH. SPACE.
9	MACHINE SHOP	TUFTEX T.	—	C.B.	C.B.	C.B.	C.B.	S.A.T.	9'-0"	
10	STORAGE	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	S.A.T.	9'-0"	
12	WOMENS TOILET	CER. T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	S.A.T.	9'-0"	
13	WOMENS REST RM.	B.O.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	S.A.T.	9'-0	
14	VAULT	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	CONC.	10'-0	
15	MEN'S TOILET	CER. T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	S.A.T.	8'-0"	
16	COAT CLOSET	TUFTEX T.	RUB.	PLAS.	M.P.	PLAS.	M.P.	S.A.T.	9'-0"	
17	PASSAGE	B.O.	RUB.	M.P.	PLAS.	PLAS	—	S.A.T.	9'-0"	
18	EDITORIAL	B.O.	RUB.	M.P.	M/PLAS	M.P.	MET.	S.A.T.	9'-0	
19	WIRE ROOM	B.O.	RUB.	PLAS	M.P.	PLAS.	M.P.	S.A.T.	9'-0"	
20	SPOATS	B.O.	RUB.	M.P.	M/PLAS	PLAS.	M.P.	S.A.T.	9'-0"	
21	PROOF	B.O.	RUB.	PLAS	PLAS.	PLAS.	M.P.	S.A.T.	9'-0"	
22	PASSAGE	B.O	RUB.	M.P.	M.P.	PLAS.	—	S.A.T	9'-0"	
23	STORAGE	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PLAS/PL.B	S.A.T.	9'-0"	
24	STORAGE	TUFTEX T.	—	C.B.	C.B.	C.B.	C.B.	S.A.T.	9'-0"	
25	PHOTO AREA	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PL.B	S.A.T.	9'-0"	
26	DARK ROOMS	TUFTEX T.	RUB.	PLAS.	PLAS.	PL.B.	PLAS.	S.A.T.	9'-0"	
27	ED. MANAGER	B.O.	RUB.	M.P.	PLAS.	PLAS.	MET.	S.A.T.	9'-0"	
28	STUDIO	B.O.	RUB.	PLAS.	M.P.	M.P.	M.P.	S.A.T.	9'-0"	
29	CONFERENCE	B.O.	RUB.	PLAS.	M.P.	M.P.	M/PLAS.	S.A.T.	9'-0"	
30	PASSAGE	C.T.	—	P.C.B.	P.C.B.	P.C.B.	P.C.B.	S.A.T.	9'-0"	
32	PUBLISHER	B.O.	RUB.	M/WOOD	WOOD	WOOD	M/WOOD	S.A.T.	9'-0"	
33	CLOSET	B.O.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	S.PL.B.	9'-0"	
34	TOILET	CER.T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	PL.B.	8'-0"	
35	TOILET	CER.T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	PL.B.	8'-0"	
36	CLOSET	B.O.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	S.PL.B.	9'-0"	
37	WAITING ROOM	B.O.	RUB.	M.P.	PLAS.	M.P.	PLAS.	S.A.T.	9'-0"	
38	GEN. MGR.	B.O.	RUB.	MET.	MET.	PLAS.	PLAS.	S.A.T.	9'-0"	
39	BUS. MGR.	B.O.	RUB.	MET.	M.P.	M.P.	PLAS.	S.A.T.	9'-0"	
40	CLOSET	B.O.	RUB.	M.P.	M.P.	M.P.	M.P.	S.A.T.	9'-0"	
42	CLOSET	B.O	RUB.	M.P.	M.P.	M.P.	M.P.	S.A.T.	9'-0"	
43	SUPPLIES	TUFTEX T.	RUB.	PLAS	PLAS	PLAS.	PLAS.	S.PL.B.	9'-0"	
45	BUS. MACH. RM.	B.O	RUB.	MET.	M.P.	M/PLWD	M.P.	S.A.T.	9'-0"	
46	BUS.	B.O	RUB.	MET	WOOD	WOOD	M/WOOD	S.A.T.	9'-0"	
47	CLOSET	TUFTEX T.	RUB.	PLAS.	PLAS.	PLAS.	PLAS.	EXP. CONC. SLAB	8'-0"	
48	CORRIDOR	B.O.	RUB.	M/PLAS	PLAS.	PLAS.	—	S.A.T.	9'-0"	
49	STORAGE	TUFTEX T.	RUB.	M.P.	M.P.	PLAS.	M.P.	S.A.T.	9'-0"	
50	CLASSIFIED	B.O.	RUB.	WOOD	WOOD		WOOD	S.A.T.	8'-0"	
52	LAYOUT	B.O	RUB.	PLAS.	M.P.	MET.	M.P.	S.A.T.	9'-0"	
53	ADVERTISING	B.O	RUB.	M/PLAS	M/PLAS	MET.	M/PLAS	S.A.T.	9'-0"	
54	AD MGR.	B.O	RUB.	M.P.	PLAS.	MET.	M.P.	S.A.T.	9'-0"	
55	CLOSET	TUFTEX T.	RUB.	PLAS.	M.P.	M.P.	PLAS.	S.A.T.	9'-0"	
56	PASSAGE	B.O	RUB.	M.P.	M.P.	—	PLAS.	S.A.T.	9'-0"	
57	STORAGE RM.	TUFTEX T.	RUB.	M.P.	M.P.	M.P.	PLAS.	S.A.T.	9'-0"	
58	LIBRARY & CONFER. RM.	B.O	RUB.	M.P.	M.P.	M.P.	PLAS.	S.A.T.	9'-0"	
59	PASSAGE	Q.T.	RUB.	P.C.B.	P.C.B.	P.C.B.	P.C.B.	S.A.T.	9'-0"	
60	SHOWERS	CER.T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	S.PL.B.	8'-0"	
61	PBX. TEL. & EQUIP RM	TUFTEX T.	RUB.	M.P	PLAS	M.P.	PLAS	SAT	9'-0"	
62	LOCKER ROOM	Q.T.	—	P.C.B.	P.C.B	P.C.B.	P.C.B.	S.A.T	8'-0"	
63	TOILET	Q.T.	—	S.C.B.	S.C.B.	S.C.B.	S.C.B.	S.A.T	8'-0"	
64	COMPOSING AREA	TUFTEX T.	—	C.B.	C.B/PL	C.B.	C.B.	S.A.T.	9'-0"	
65	PRESS ROOM	G.M.C.	—	P.C.B.	P.C.B	P.C.B	P.C.B.	EXP. STRUC.		5" DADO S.C.B.
66	LOCKER ROOM	Q.T.	—	S.C.B.	S.C.B.	S.C.B.	S.C.B.	S.A.T.	8'-0"	
67	TOILET	Q.T.	—	S.C.B.	S.C.B.	S.C.B.	S.C.B.	S.A.T.	8'-0"	SHOWER STALL: GLAZ.T. FLOORS, GLASS T. WALLS.
68	STORAGE	M.CONC.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.		
69	STORAGE	M.CONC.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.	—	
70	BOILER ROOM	M.CONC.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.	—	
72	ELECTR. SERVICE	FLO.C.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUC.	—	
73	MOWING MACH.	FLO.C.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUC.	—	
74	TOILET	FLO.C.	—	S.C.B.	S.C.B.	S.C.B.	S.C.B.	S. PL. B.	8'-0"	
75	DELIVERY & MAIL	M.CONC	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.	—	
76	TRUCK PORT	FLO.C.	—	C.B.	HYDRO. DOORS	C.B.	C.B.	EXP. STRUCT.	—	
77	MAINTENANCE SHOP	M.CONC	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.	—	
78	ROLL STORAGE	M.CONC	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUCT.	—	
79	PLATE ROOM	TUFTEX T.		PL.B.	PL.B.	PL.B.	PL.B	S.A.T.	9'-0"	
80	DEVELOP ROOM	TUFTEX T.		PL.B.	M/PLAS	PL.B.	PL.B.	S.A.T.	9'-0"	
81	CAMERA	TUFTEX T.		PL.B.	PLYW. PL.B	PL.B.	PL.B.	S.A.T.	9'-0"	
210	ROOF	M.C.	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUC.	—	
201	STAIR CASE	M.CONC	—	P.C.B.	P.C.B.	P.C.B.	P.C.B.	S. PL. B.	8'-0"	
202	FOYER	B.O.	RUB.	PL.B.	PL.B.	PL.B.	PL.B.	S. PL. B.	8'-0"	
203	BATH RM.	CER. T.	—	GLAZ.T.	GLAZ.T.	GLAZ.T.	GLAZ.T.	S. PL. B.	8'-0"	
204	CLOSET	B.O.	RUB.	PL.B.	PL.B.	PL.B.	PL.B.	S. PL. B.	8'-0"	
205	BED ROOM	B.O	RUB.	PL.B.	PL.B.	PL.B.	PL.B.	S. PL. B.	8'-0"	
206	LIVING ROOM	B.O.	RUB.	PL.B.	PL.B.	PL.B.	PL.B.	S. PL. B.	8'-0"	
207	CLOSET	B.O.	RUB	PL.B.	PL.B.	PL.B.	PL.B.	S. PL. B.	8'-0"	
208	STORAGE	B.O.	RUB.	PL.B.	PL.B.	PL.B.	PL.B.	—	8'-0"	
209	MECH. EQUIPMENT RM.	M. CONC	—	C.B.	C.B.	C.B.	C.B.	EXP. STRUC.	—	

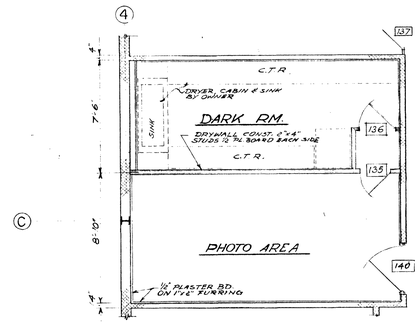
EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

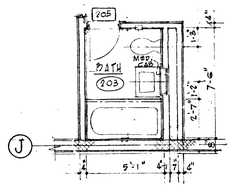
DOOR SCHEDULE AND ROOM FINISH SCHEDULE

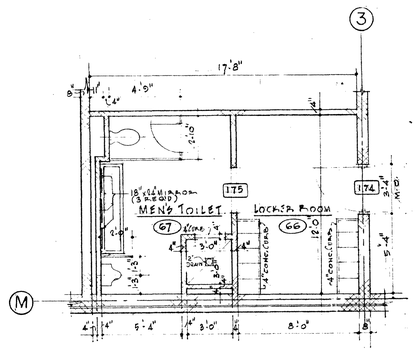
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

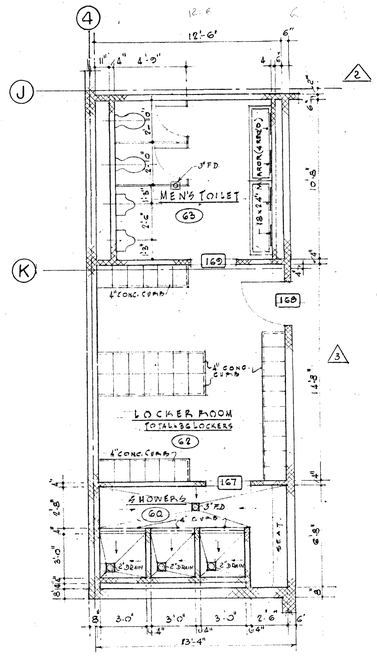
NO	DATE	REVISION	BY	CHK	APPR.
3	6-24-66	ADDM. 5A, RMS 38, 41 PD	JLH		
2	4-28-66	ADDENDUM NO 3	A-D		
1	3-28-66	PER ADDENDUM NO 1.	A-D		

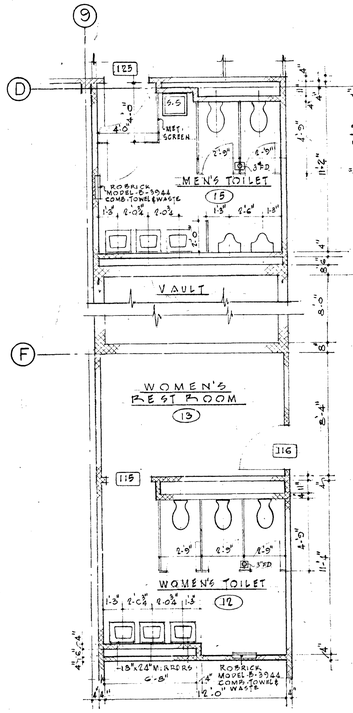
MADE BY: NAME L.W.H. DATE 1-5-66
CHECKED BY:
APPROVED: 2/8/66
SCALE:
JOB NO. 65109
DWG. NO. A-8
DATE FEB-8-1966.

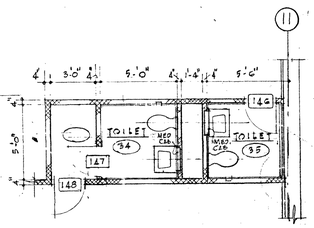


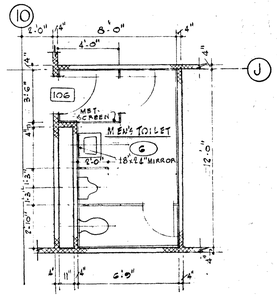


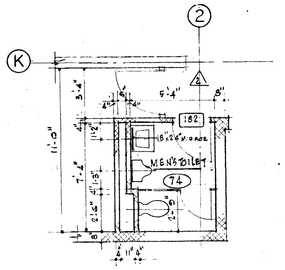


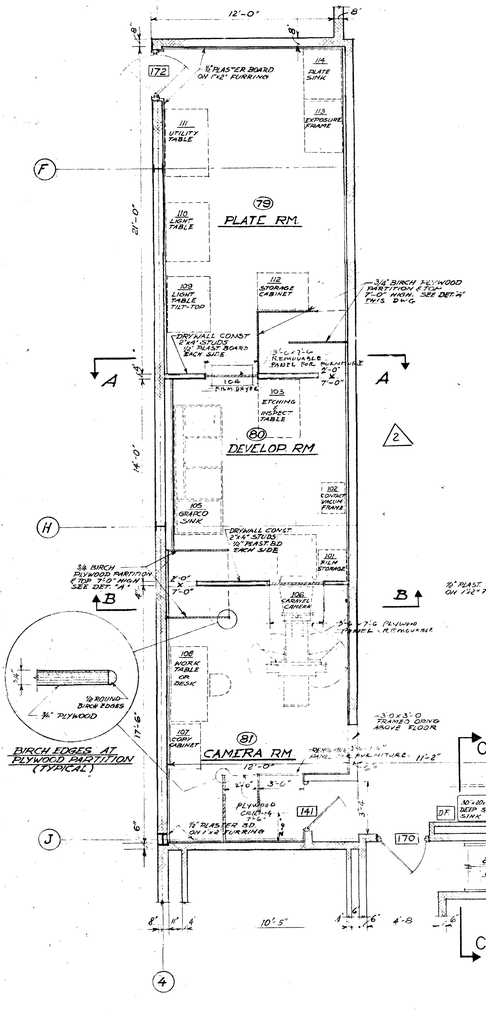


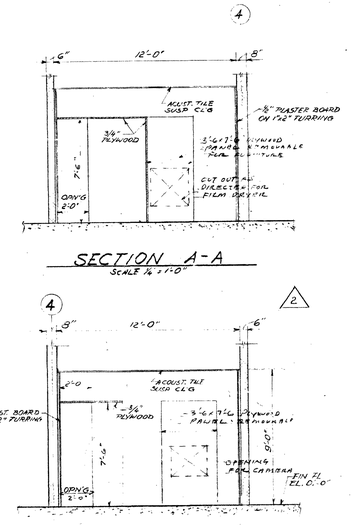












SECTION A-A
SCALE ¼"=1'-0"

SECTION B-B
SCALE: ¼"=1'-0"

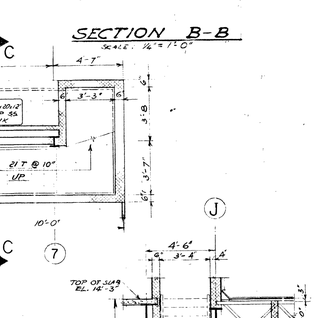
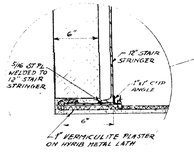
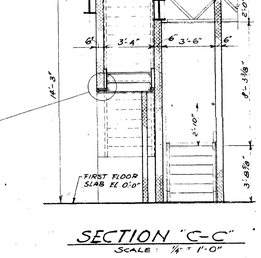
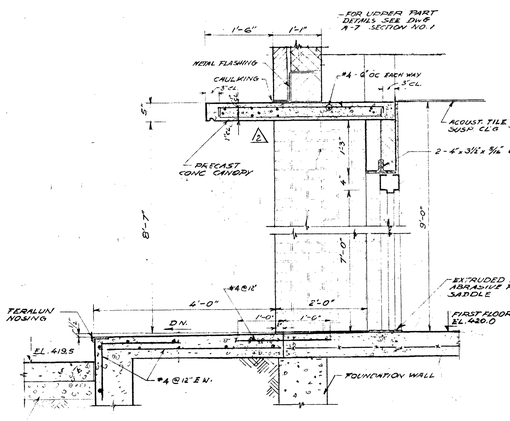


PHOTO-MECHANICAL ROOMS
SCALE: ¼" = 1'-0"

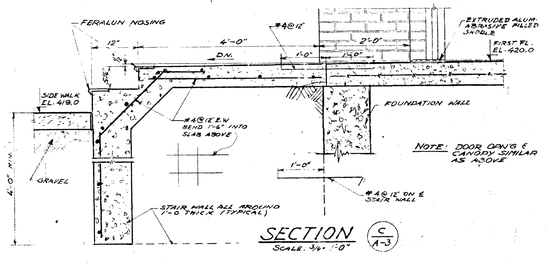




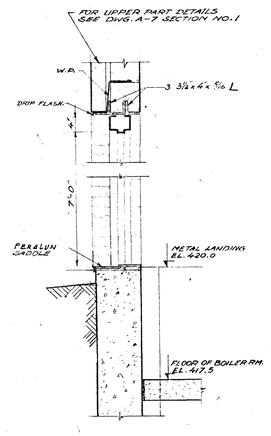
SECTION "C-C"
SCALE: ¼" = 1'-0"



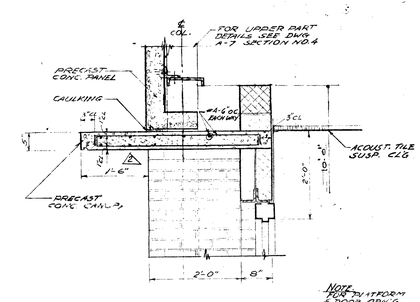
SECTION (B / A-6)
SCALE: ¾"=1'-0"



SECTION (C / A-3)
SCALE: ¾"=1'-0"



SECTION (A / A-3)
SCALE: ¾"=1'-0"



NOTE: FOR UNIFORM CLOCK OPNG'S SEE DET. SECTION 'B' ON THIS DWG.

SECTION (D / A-3)
SCALE: ¾"=1'-0"

TOILET ROOM DETAILS
SCALE ¼" = 1'-0"

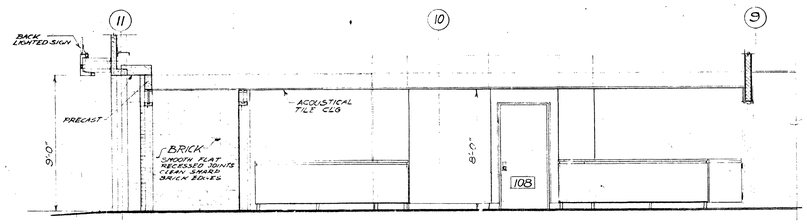
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

MISCELLANEOUS DETAILS

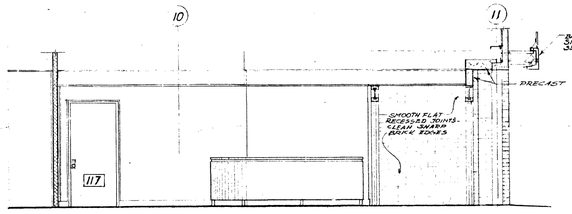
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

No	DATE	REVISION	BY	CHK	APPR.
4	6-14-66	Removable Plywood Panels in Auto.	CLH		6/14
3	5-6-66	STAIRS CORRECTION	A-D		
2	4-18-66	ADDENDUM NO. 2 & 3.	A-D		5/4
1	3-28-66	PER ADDENDUM NO. 1	A-D		3/29

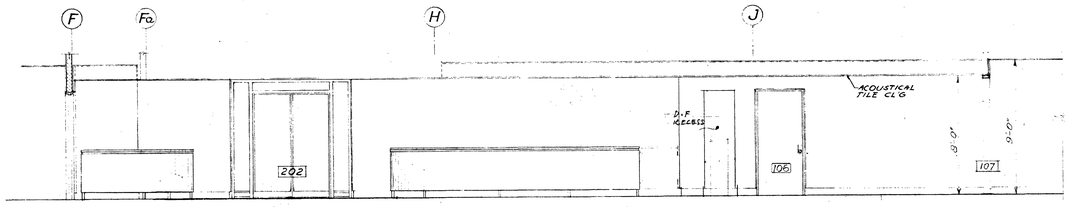
MADE BY: NAME A-D DATE 2-8-66
CHECKED BY:
APPROVED: 6/10 5/5/66
SCALE
JOB NO. 65109
DWG. NO. A-9
DATE FEB. 8-1966



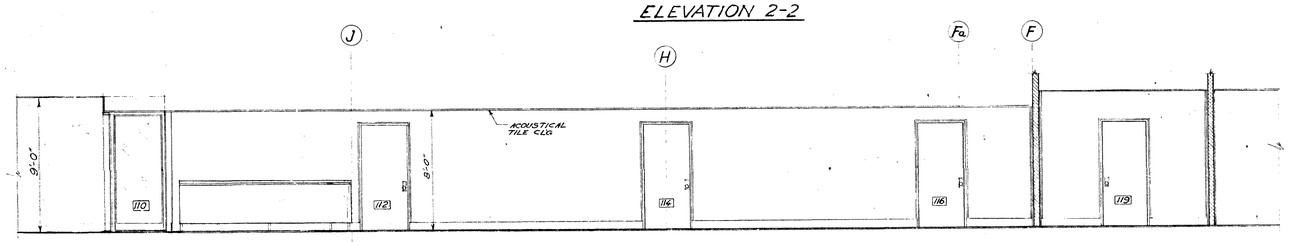
ELEVATION 3-3



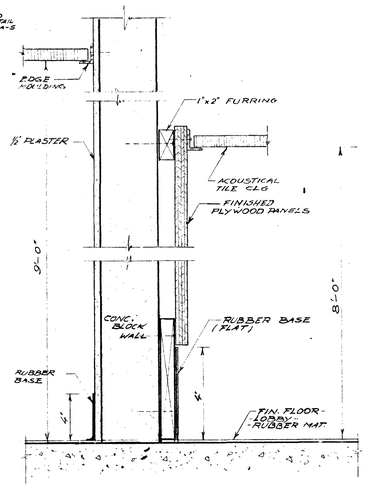
ELEVATION 4-4



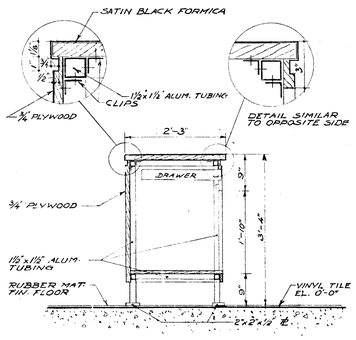
ELEVATION 2-2



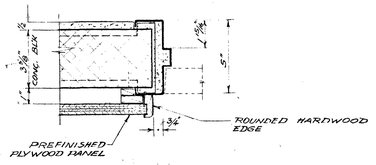
ELEVATION 1-1



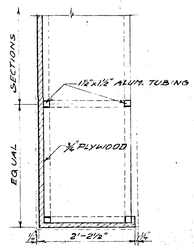
SECTION "A"
SCALE 3" = 1'-0"



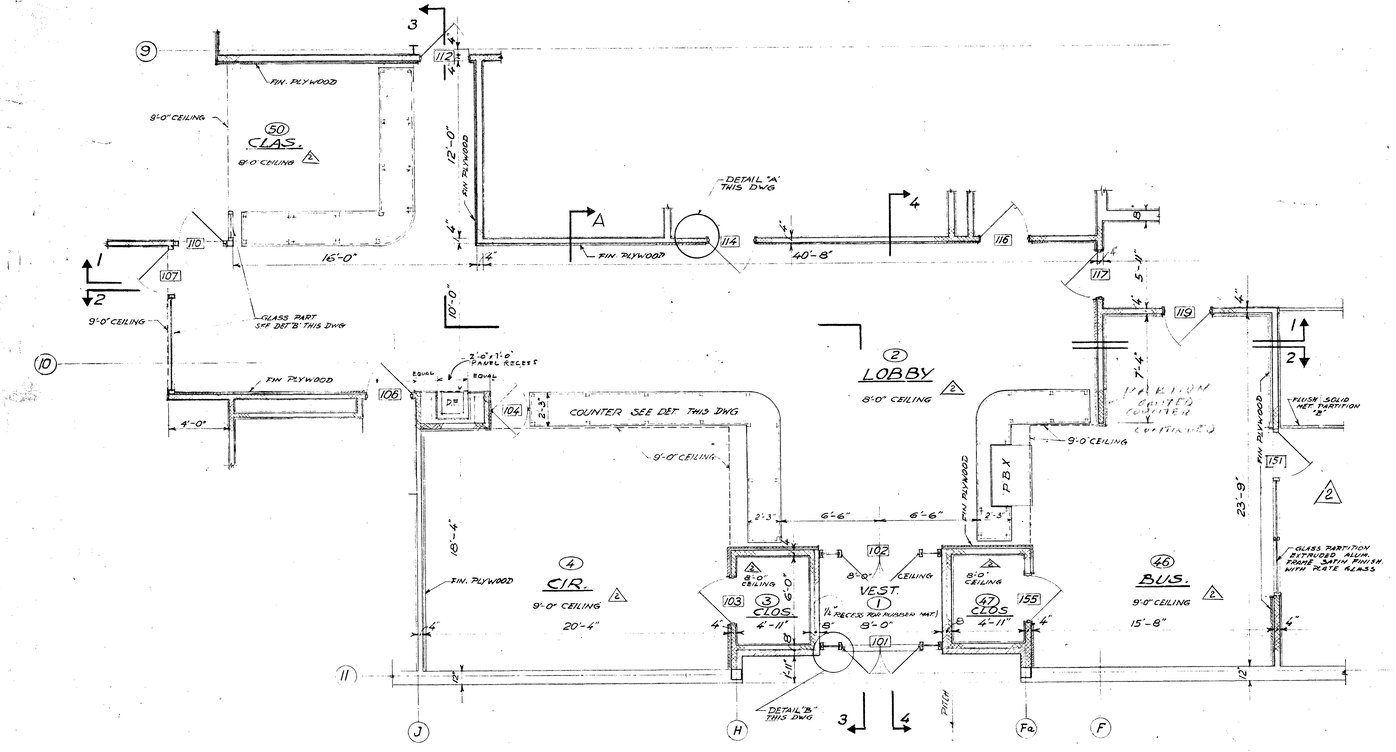
SECTION THRU COUNTER
SCALE: ¾" = 1'-0"



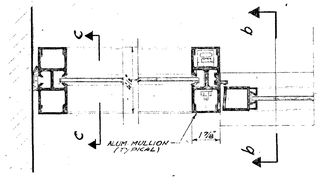
DETAIL "A"
SCALE: 3" = 1'-0"



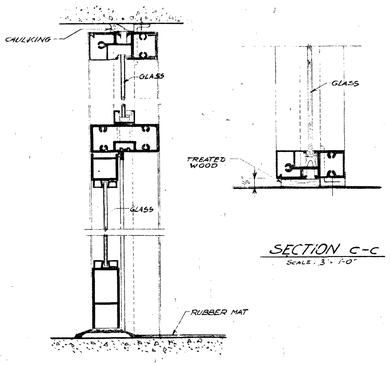
PART PLAN SECTION THRU COUNTER
SCALE: ¾" = 1'-0"



PLAN
SCALE 1/4" = 1'-0"



DETAIL "B"
SCALE: 3" = 1'-0"



SECTION C-C
SCALE: 3" = 1'-0"

SECTION 6-6
SCALE 3"=1'-0"

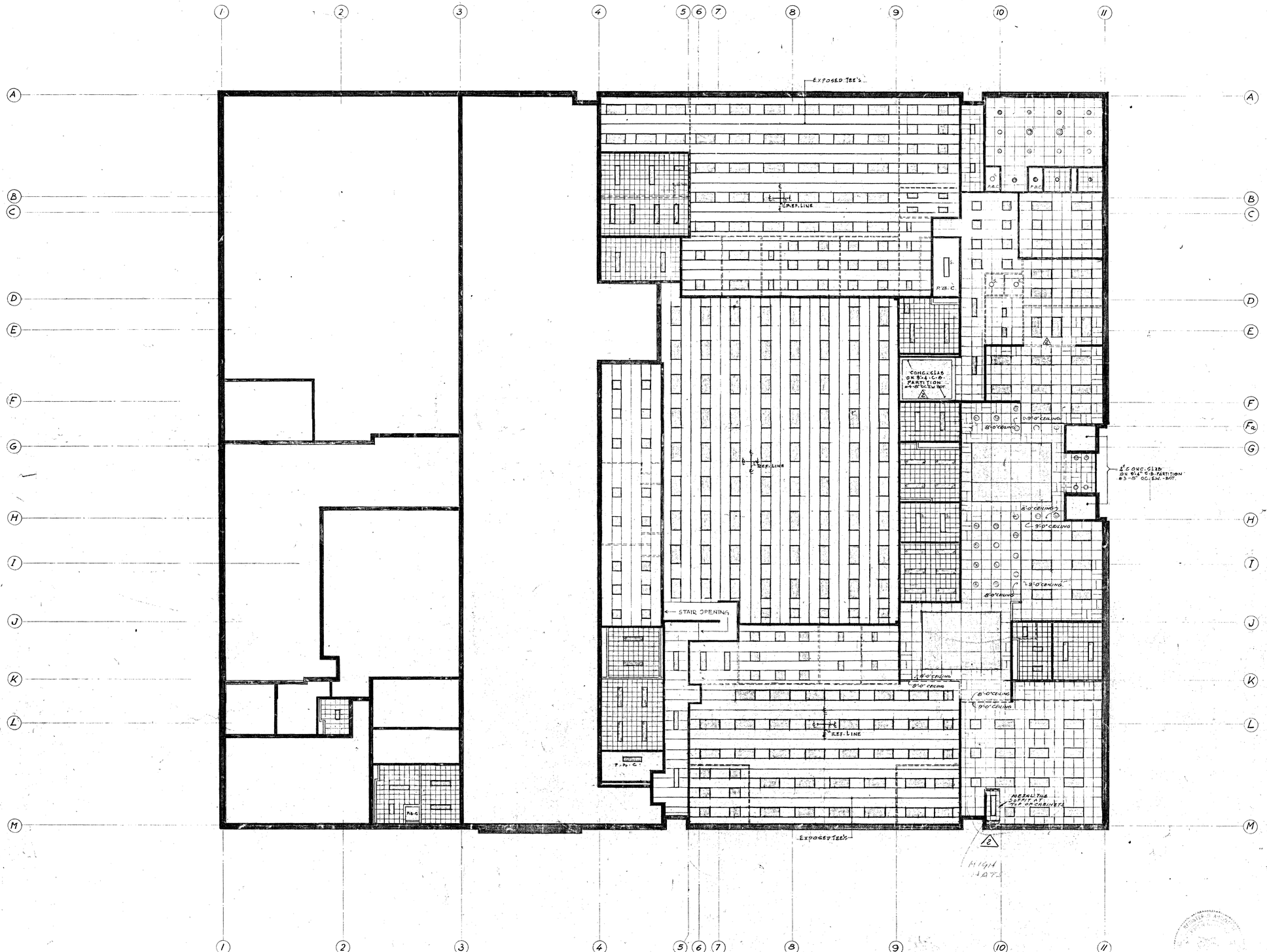
No	DATE	REVISION	BY	CHK	APPR
3	6-28-66	Revised Ind. Access D.F. Recess in Lobby	CLH		
2	4-28-66	ADDENDUM NO 3	A-D		
1	3-28-66	7TH ADDENDUM NO. 1	A-D		

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

MISCELLANEOUS DETAILS

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	A.D.	DATE 2-8-66	JOB NO. 65109	DWG. NO. A-10
CHECKED BY				
APPROVED	CLH	4/8/66		
SCALE AS SHOWN		DATE FEB. 8, 1966		



LEGEND

- MOVABLE PARTITION TO CEILING
- WALL THRU TO ROOF
- WALL 10'-0" HIGH (THRU CEILING)
- P.B.C. = PLASTER BOARD CEILING 9'-0" H.I.G.H.
- (NOT SHADED) = SURFACE MOUNTED FIXTURES.

CEILING PENETRATIONS

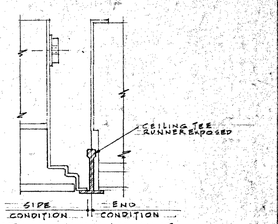
- 250 = SPRINKLER HEADS
- 20 = ROUND DIFFUSERS
- 50 = SQUARE DIFFUSERS
- 30 = RETURN AIR REGISTERS
- 90 = "ACCESS 50" CLIPS FOR CONCEALED SPLINES

CEILING "A"
12"x24" FISSURED MINERAL TILE EXPOSED TEE'S ONE WAY SEE DETAIL.

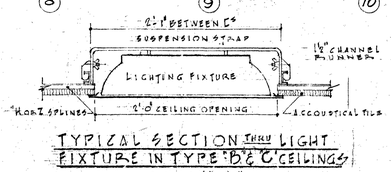
CEILING "B"
12"x24" FISSURED MINERAL TILE CONCEALED SPLINE SEE DETAIL.

CEILING "C"
12"x12" PERFORATED METAL CEILING SEE DETAIL.

CEILING "D"
PLASTER BOARD CEILING IN CLOSET



DETAIL FOR LAY IN FIXTURES IN TYPE "A" CEILING
SCALE 1½"=1'-0"



TYPICAL SECTION THRU LIGHT FIXTURE IN TYPE "B" & "C" CEILINGS
SCALE 1½"=1'-0"

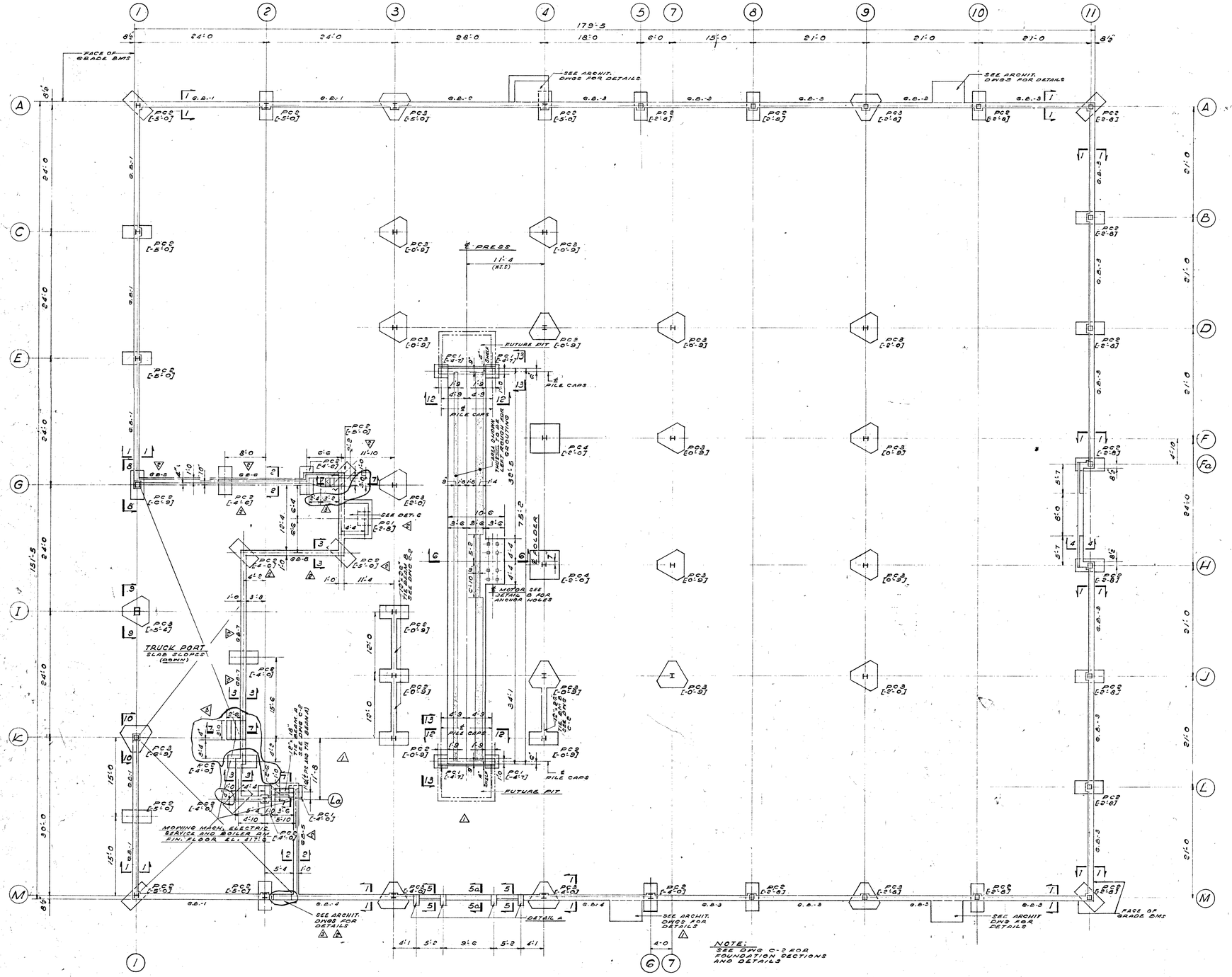
NO	DATE	REVISION	BY	CHK	APPR.
4	10-5-66	COORDINATED WITH DWGS E-3 & A-3E	L.W.H.		
3	6-24-66	KITCHEN RECESS	R.H.		
2	4-28-66	ADDENDUM NO 2	R.D.		
1	3-28-66	PER ADDENDUM NO. 1.	R.D.		

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

REFLECTED CEILING PLAN

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME A.A.P	DATE 1-18-66	JOB NO. 65109	DWG. NO. A-11
CHECKED BY				
APPROVED				
SCALE 1/8" = 1'-0"			DATE FEB. 8 1966	



FOUNDATION PLAN

FINISHED 1ST FLOOR EL. 420'-0 = DATUM EL. 0'-0
PC DENOTES PILE CAP TYPE. SEE DWG C-2 FOR DETAILS
[±] DENOTES TOP OF PILE CAP FROM EL. 420'-0

FOUNDATION NOTES

1. Building loads supported on poured in place concrete [illegible] to develop a capacity of 25 tons per pile. PER ENGINEERING NEWS RECORD FORMULA.
2. All concrete for foundations shall be stone concrete having a minimum compressive strength of 3000 psi at 28 days.
3. All concrete work shall conform to the latest edition of the "New York State Building Code," and with local laws and ordinances, which ever governs.
4. Reinforcing steel shall be deformed bars intermediate grade new billet steel conforming to A.S.T.M. Specs A-15 & A 305.
5. See Arch. Mech & Elect. drawings for sleeves and inserts in concrete.
6. Provide 2 - #6 bars around all openings.
7. For slabs on grade see Arch. Dwgs.
8. For boring Logs see specs and Arch. Dwgs.
9. For porous fill under slabs see Specs.

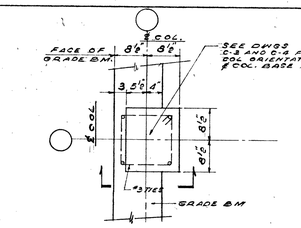
NO	DATE	REVISION	BY	CHK.	APPR.
4	4/27/66	REV. P.C. CAPACITY, STAIRS AND GRADES AS PER A.E.R. DWG. C-2	A.R.	I.S.	I.S.
3	3/16/66	ADDED DET. C AND GENERAL REVISIONS AS [illegible]	A.R.	I.S.	I.S.
2	2-8-66	REVISED PILES AND FOUNDATION LOCATIONS	A.R.	I.S.	I.S.

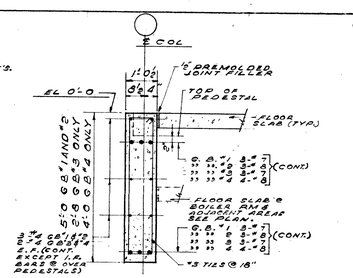
EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

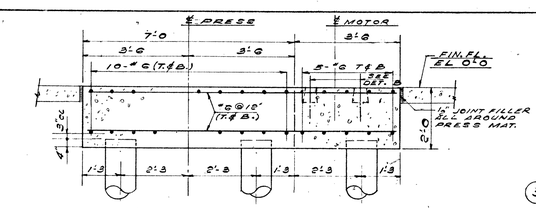
FOUNDATION PLAN

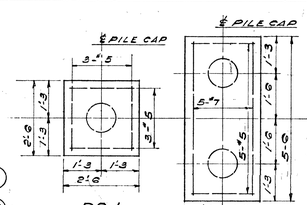
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

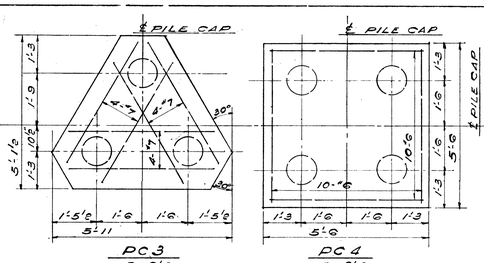
MADE BY	NAME A.P.	DATE 2-8-66	JOB NO.	DWG. NO.
CHECKED BY	J.D.	2-8-66	65109	C-1
APPROVED	I.S.	2-8-66		
SCALE 1/8"=1'-0"			DATE FEB. 8 1966	

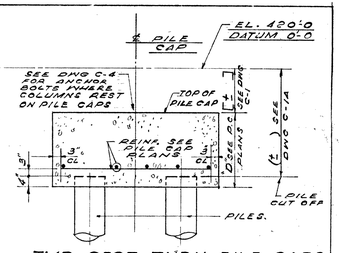


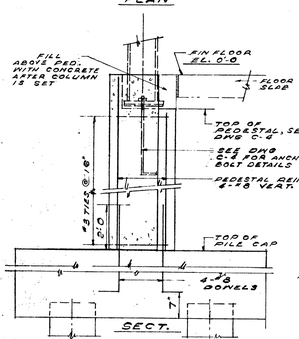


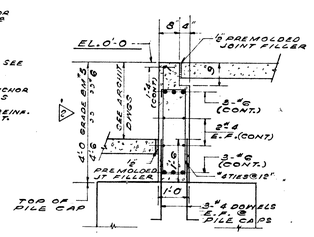


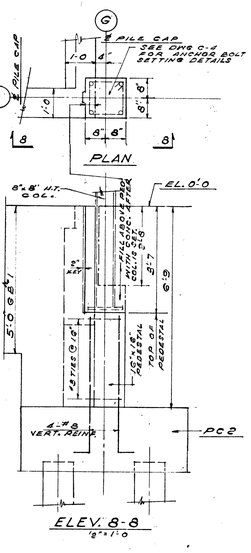


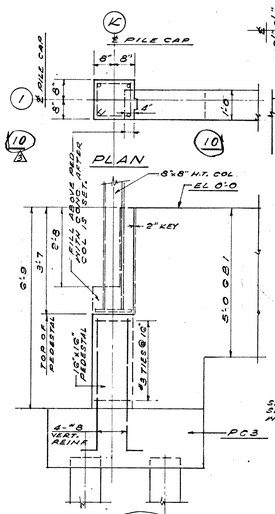


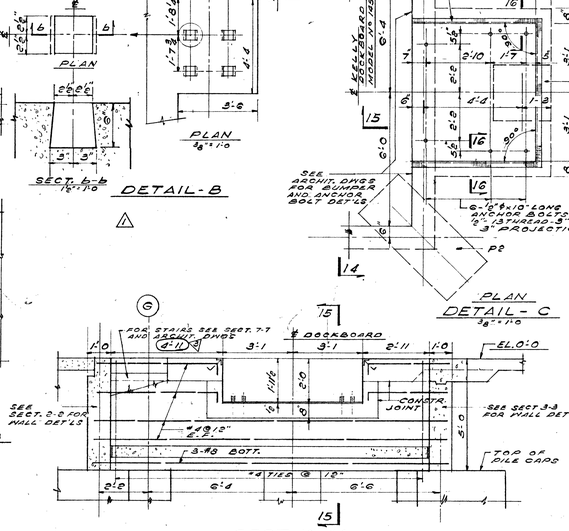


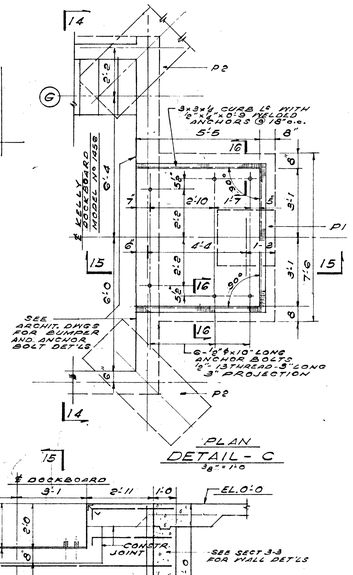


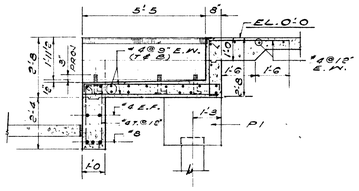


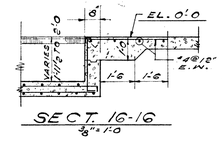


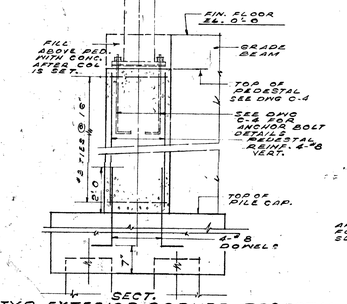


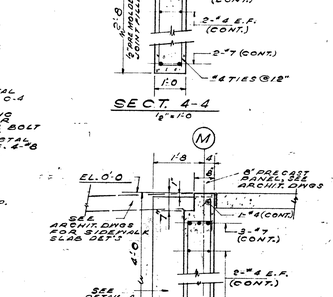


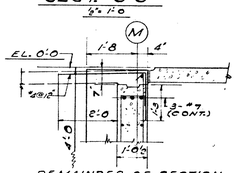


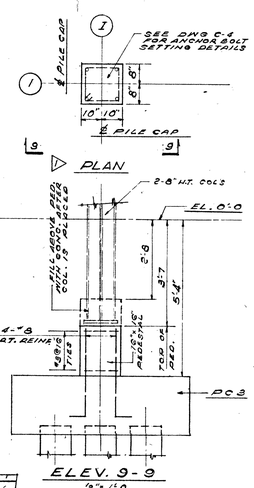


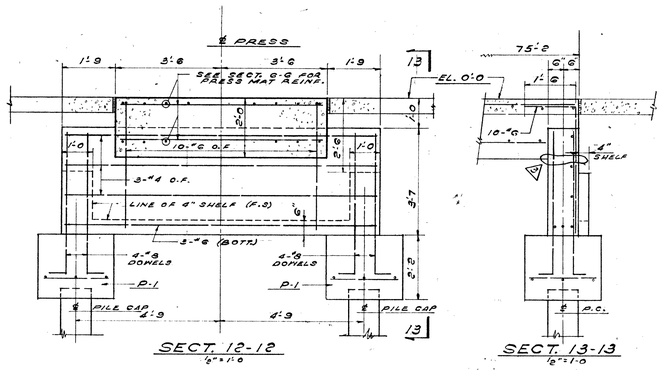


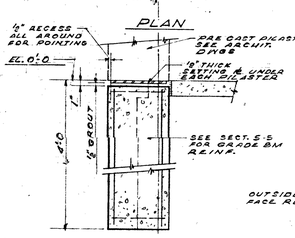




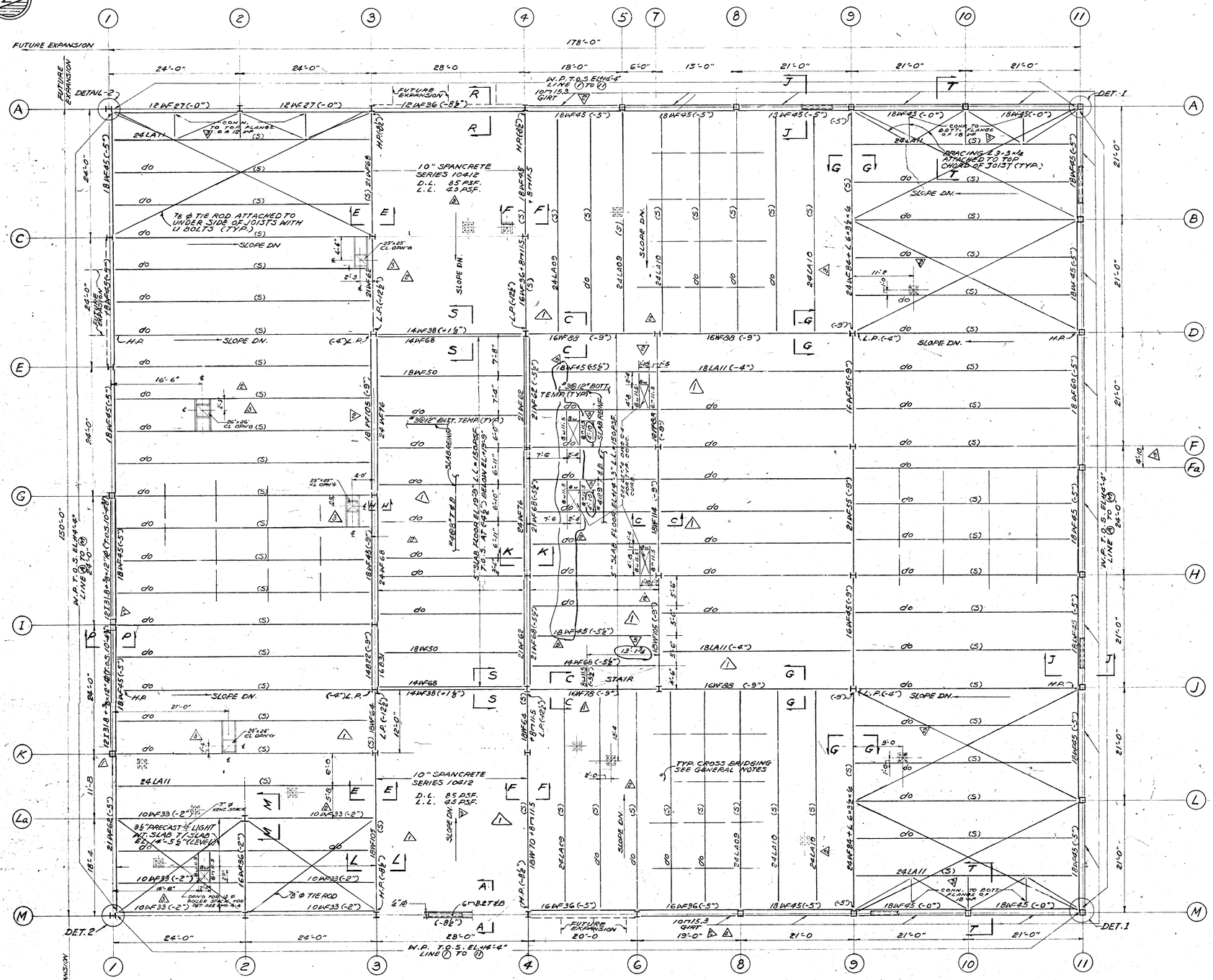


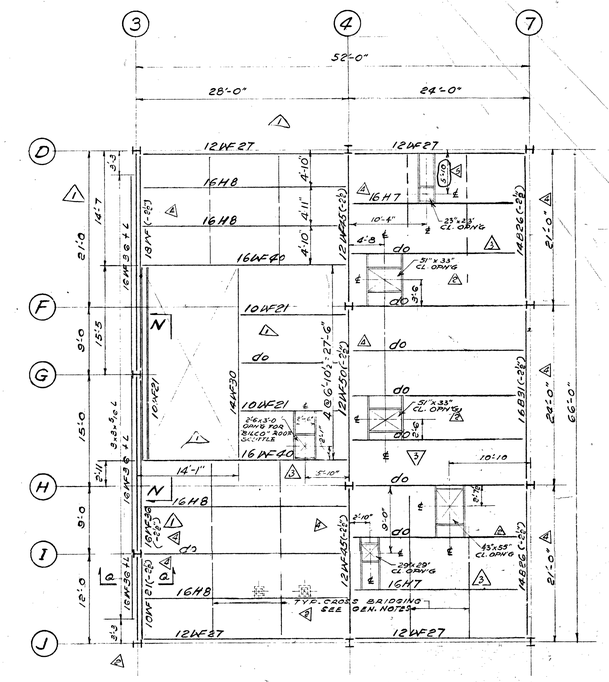






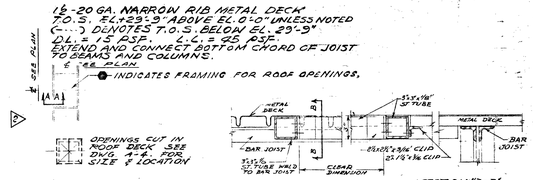
FILL ABOVE PED. WITH CONCRETE AFTER COL IS SET.
GRADE BEAM
SEE DWG C-4 FOR ANCHOR BOLT DETAILS
PEDESTAL REINF. 4-#8 VERT.
#3 TIES @ 18"
TOP OF PILE CAP.
4-1" DOWELS
SECT.
DETAIL - A SEE DWG C-1





M.E. ROOM ROOF

1½"-20 GA. NARROW RIB METAL DECK.
T.O.S. EL.29'-9" ABOVE EL.0'-0" UNLESS NOTED
(...) DENOTES T.O.S. BELOW EL. 29'-9"
D.L. = 15 PSF. L.L. = 250 PSF.
EXTEND AND CONNECT BOTTOM CHORD OF JOIST TO BEAMS AND COLUMNS.



ROOF FRAMING PLAN

1½"- 20 GA. NARROW RIB METAL DECK UNLESS NOTED.
SPANDREL BEAMS SHALL BE CONNECTED TO INSIDE COL. FLANGE UNLESS NOTED.
ALL BEAM EQUALLY SPACED BETWEEN COLUMNS UNLESS NOTED.
(+...-) DENOTES T.O.S. OF STEEL ABOVE OR BELOW WORKING POINT (W.P.) ELEVATIONS.
D.L. = 15 PSF. L.L. = 45 PSF. UNLESS NOTED.
EXTEND AND CONNECT BOTTOM CHORD OF JOIST TO BEAMS AND COLUMNS BETWEEN COL. LINES 9 AND 11 OF LOWER ROOF UNLESS OTHERWISE NOTED.
(S) DENOTES SLOPE MEMBER.
Ⓓ FOR LOCATION OF ROOF DRAINS SEE MECHANICAL PLANS

No	DATE	REVISION	BY	CHK	APPR.
1	5/11/66	REV. 3-16W TO 16 W AND 3 DIM. ENVIONS. ADDED 12"x½" PL. DIM.	A.P.	I.S.	
2	4/27/66	ADD 10"@ROOF LINE A/E TO M-N & M.E. RM ROOF 37'-9½"	A.P.	I.S.	I.S.
3	4-14-66	REV. ROOF OPENING AND JOISTS, DIM'S COL & 11 AS C	A.P.	I.S.	I.S.
4	3/16/66	ADD 16WF L @ COL LINES			
		REV. LOC. COL. La-1, ADD ROOF BRACING AND OPENINGS AS C	A.P.	I.S.	I.S.
5	2-21-66	REVISED DIMENSIONS BEAM S1&S2 & SUB. STEEL AS CIRCLED.	J.D.	I.S.	I.S.

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.
ROOF FRAMING PLAN

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME	DATE	JOB NO.	DWG. NO.
	K.L.	1-25-66	65109	C-3
CHECKED BY	J.D.	1-25-66		
APPROVED	I.S.	1-25-66		
SCALE	1/8"=1'-0"		DATE	FEB. 8, 1966

COLUMN SCHEDULE

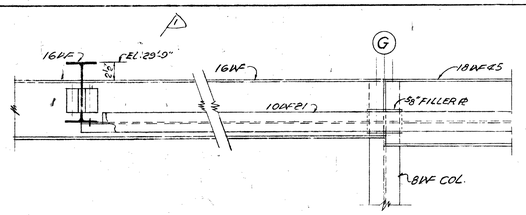
STORY / COL. NO.	A1	A2	A3	A4	A5	A8	A9	A10	A11	B1	C1	C3	Ca	D3	D4	D7	D9	D11	E1	F4	F7	F9	Fa11	G1	G3	H4	H7	H9	H11	I1	I3	J3	J4	J7	J9	J11	K1	K3	K4	L1	M1	M2	M3	M4	M6	M8	M9	M10	M11	L2
MECH. EQPT. RM. ROOF																																																		
T.O.S. EL. +29'-9"														23	26	15				42	15			30	40	25					22	12	17	15																	
FIN. PENT HOUSE FL. EL. +29'-9"														86	80	127				132				142	131						90	38	81																	
MAIN ROOF M.P.T.O.S EL. +14'-4" (UNLESS NOTED)	24	12	40	45	*45	45	75	25	32	*39	*46	*72	42	163	165		*91	54	26	202	141	62	53	46	196	202	152	62	48	46	127	76	172	135	*90	49	51	66	42	38	25	87	51	53	46	46	75	25	32	28
FIN. FIRST FL. EL. +20'-0" = DAT. EL. (0'-0")	8WF31	C.O.	C.O.	8WF31	C.O.	C.O.	C.O.	C.O.	C.O.	8WF48	8WF31	C.O.	8WF31	8WF48	8WF48	8WF40	8WF31	8×8×¼ H.T.	8WF31	8WF58	8WF40	8WF31	8×8×¼ H.T.	8WF58	8WF58	8WF40	8WF31	8×8×¼ H.T.	8×8×¼ H.T.	2-8×5½ #/FT.	8WF40	8WF31	8WF48	8WF40	8WF31	8×8×½ H.T.	8WF31	8WF31	8WF31	8×8×½ H.T.	8WF31	C.O.	C.O.	C.O.	8WF31	8×8×½ H.T.	C.O.	C.O.	8×8×½ H.T.	8WF31
BASE ℞ SIZE	10"×¾"×0'-10"	C.O.	C.O.	10"×¾"×0'-10"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×0'-10"	C.O.	10"×¾"×0'-10"	15"×1⅛"×1'-3"	15"×1⅛"×1'-3"	14"×1⅛"×1'-2"	12"×¾"×0'-10"	10"×¾"×0'-10"	10"×¾"×0'-10"	17"×1⅜"×1'-5"	15"×1⅛"×1'-3"	10"×¾"×0'-10"	10"×¾"×0'-10"	10"×¾"×1'-2"	17"×1⅜"×1'-5"	17"×1⅜"×1'-5"	15"×1⅛"×1'-3"	10"×¾"×0'-10"	10"×¾"×1'-2"	12"×¾"×1'-2"	14"×1⅛"×1'-2"	10"×¾"×0'-10"	17"×1⅜"×1'-5"	14"×1⅛"×1'-2"	12"×¾"×0'-10"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×0'-10"	10"×¾"×0'-10"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×0'-10"	10"×¾"×0'-10"	10"×¾"×0'-10"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×1'-2"	10"×¾"×0'-10"

COL. CUT-OFF 8" TYP.

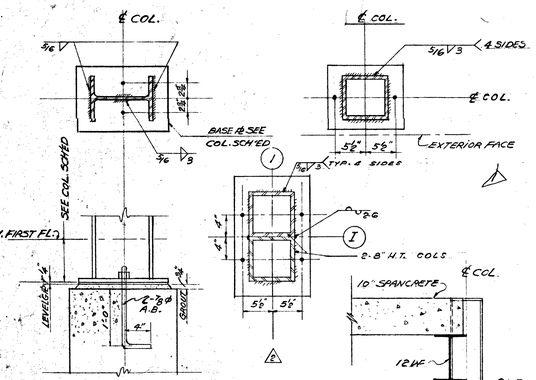
NOTE: 1. ALL COLUMN LOADS ARE IN KIPS (/1000#).
2. FIRST DIMENSION OF BASE ℞ IS PARALLEL TO COL. WEB.
3. COL. CUT-OFF IS TO BOTTOM OF BASE ℞.
4. SEE DETAIL-3 FOR TOP OF COL. MARKED THUS. *

STEEL NOTES

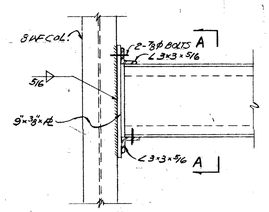
1. Design of all structural steel based on allowable stresses & specifications of A-36 Type steel of current A.I.S.C. code.
2. All structural steel work shall conform to the current A.I.S.C. code for material and workmanship & comply with all local laws and ordinances.
3. All long span joists construction shall conform to the current spec's of the "Steel Joist Institute" for LA series A-36 spec.
4. All Joists shall have parallel top & bottom chords unless noted.
5. Rivets and Bolts shall be 7/8" ø .
6. All shop connections shall be riveted (ASTM A-141 rivets) or welded.
7. All field connections within 3'-0" radius of column shall be made with ASTM A-325 High Strength friction type bolts. Where rivets or bolts are used, the maximum number indicated in Table I of A.I.S.C. Manual unless otherwise noted. All other field bolted connections may be unfinished machine bolts.
8. Long Span Joists: All shop fabrication and field connections shall be welded.
9. Mill bearing end of all columns.
10. Paint all steel one shop coat of approved paint see spec's.
11. Camber of Long Span Joists as per "Steel Joist Institute."
12. Extend bottom chords of all Joists and rigidly connect to columns.
13. Joist Bridging shall consist of bolted cross bracing composed of not less than 1-1/4" x 1-1/4" x 1/8" angles spaced 10'-0" o/c maximum.
14. Metal roof deck shall be welded to supporting steel, see spec's.



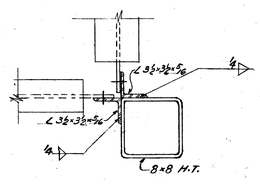
SECTION N-N
3/4"=1'-0"



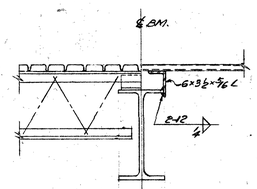
TYP. COLUMN BASE DETAIL



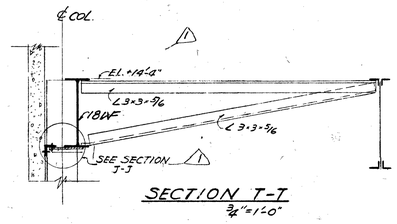
SECTION B-B
3/4"=1'-0"



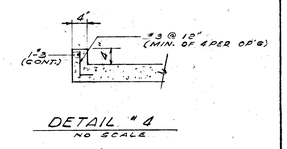
DETAIL - 1
1½"=1'-0"



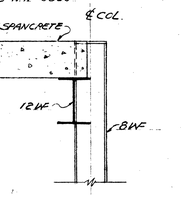
SECTION G-G
3/4"=1'-0"



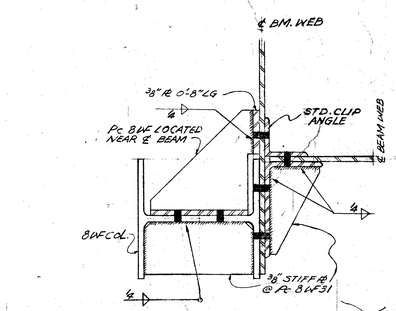
SECTION T-T
3/4"=1'-0"



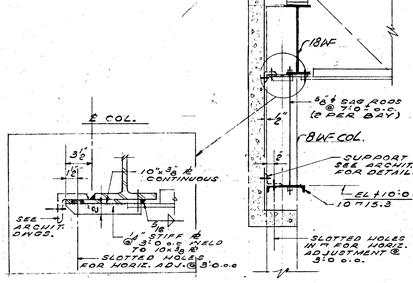
DETAIL "4
NO SCALE



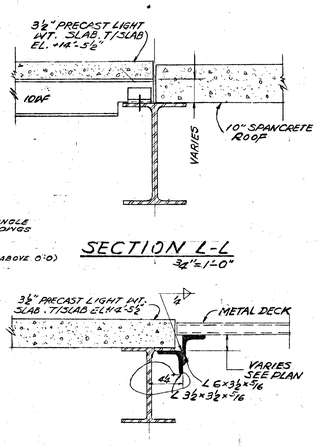
SECTION A-A
3/4"=1'-0"



DETAIL - 2
3"=1'-0"



SECTION J-J
1½"=1'-0"

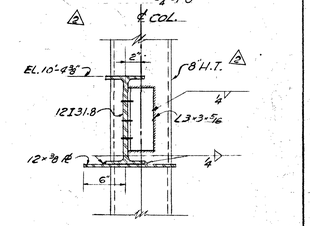


SECTION L-L
3/4"=1'-0"

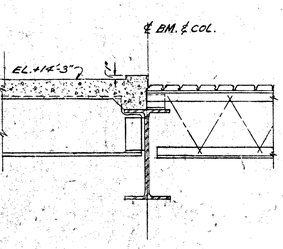


SECTION M-M
1½"=1'-0"

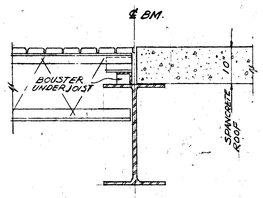
SECTION Q-Q
3/4"=1'-0"



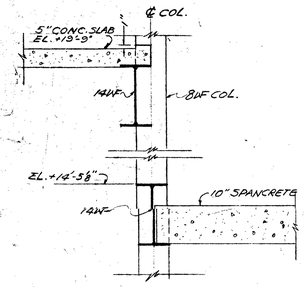
SECTION P-P
1½"=1'-0"



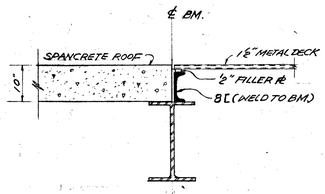
SECTION C-C
3/4"=1'-0"



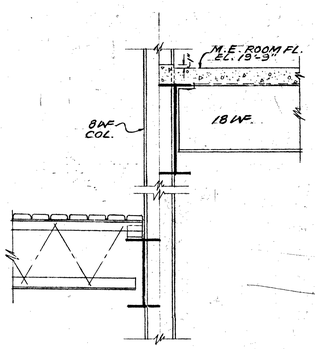
SECTION E-E
3/4"=1'-0"



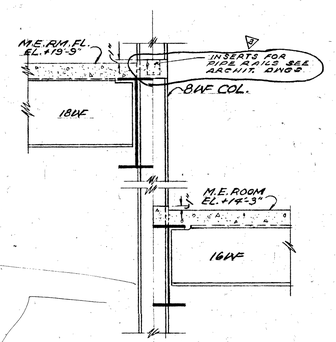
SECTION S-S
3/4"=1'-0"



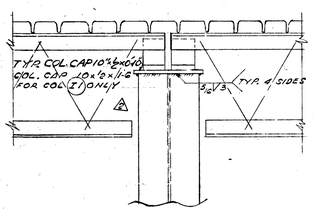
SECTION F-F
3/4"=1'-0"



SECTION H-H
3/4"=1'-0"



SECTION K-K
3/4"=1'-0"



DETAIL - 3
1½"=1'-0"

No	DATE	REVISION	BY	CHK	APPR.
4	4/6/66	REV. BASE ℞ FOR COL (1) AND NOTED INSERTS SECT. K-K	A.P.	I.S.	
3	3/16/66	REV. SECT. L-L FOR COL. (1) LENGTHS FOR COL'S NO.			
2	2-21-66	ADDED SECT. J-J, L-L, & M-M	A.P.	I.S.	I.S.
1	2-21-66	CLARIFIED SECT. J-J, JOIST & LIGHT GIRDER ERECTION, SHEET NO. ADDED	J.D.	I.S.	I.S.

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

COLUMN SCHEDULE & DETAILS

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

	NAME	DATE	JOB NO.	DWG. NO.
MADE BY	R.L.	1-25-66	65109	C-4
CHECKED BY	J.D.	1-25-66		
APPROVED	I.S.	1-25-66		
SCALE	AS NOTED		DATE	FEB. 8, 1966

FLOW & CONTROL DIAGRAM PRESSROOM SYSTEM HV-1 & COMPOSING RM. SYSTEM HV-2

EXHAUST FAN (TYPICAL)
EASY KASTER HOOD EXH. FAN E-HV-1A 480 CFM
REMELT POT EXH. FAN E-HV-1B 450 CFM
ELROD HOOD EXH. FAN E-HV-2A 900 CFM
DARK ROOM EXH. FAN E-HV-2B 1410 CFM

WIRE TO LOAD SIDE OF EXHAUST FAN CONTROLLER
MAIN AIR
EXHAUST AIR AMD-N.C.
ROOF RELIEF VENT
RETURN FAN R-HV-1 15,000 CFM R-HV-2 9,000 CFM
FIRESTAT-SET@ 125°F WIRE TO SUPPLY FAN STARTER
12,000 CFM FROM PRESS RM (HV-1) 3,000 CFM FROM COMPOSING RM (HV-2)
MASTER THERMOSTAT IN COMMON RETURN AIR DUCT
RETURN AIR AMD-N.O. HV-1 13,350 CFM HV-2 9,000 CFM
EXHAUST AIR AMD-N.C. HV-1 (2,200 (5850 CFM) HV-2 (E.P. 8,800 CFM)
MAX. O.A. AMD N.C. HV-1 13,050 CFM HV-2 8,800 CFM
LOUVER & WIRE MESH SCREEN
LOW LIMIT THERMO-STAT SET@ 40°F
FREEZE STAT-SET@ 35°F WIRE TO SUPPLY FAN STARTER
SUBMASTER THERMOSTAT IN SUPPLY FAN DISCHARGE
ELECTRIC REHEAT COIL (TYP.) HC-HV-1B, 2C, 2D.
STM. VALVE N.O.
SUPPLY FAN HV-1 14,200 CFM HV-2 11,550 CFM E.P. AIR
MIN. O.A. AMD N.C. HV-1 1,450 CFM HV-2 2,580 CFM
E.P. AIR
MAIN AIR
"NIGHT OPERATION" THERMOSTAT
WIRE TO SUPPLY FAN STARTER
WIRE TO LOAD SIDE OF SUPPLY FAN STARTER FOR "DAY" OPERATION ONLY
SILICON CONTROL RECTIFIER
CONTROLLER

MASTER-SUBMASTER RESET SCHEDULE		
SYSTEM	RETURN AIR TEMP. °F	SUBMASTER RESET POINT °F
HV-1	72 78	84.0 86.5
HV-2	72 78	88.0 90.5

ROLL STORAGE H & V SYSTEM HV-3
DELIVERY & MAIL H & V SYSTEM HV-4

EXHAUST FAN (TYP.)
E.F.HV-3 3,720 CFM HIGHER SPEED 1,775 CFM LOWER SPEED
TRUCK PORT E-HV-4A 2,860 CFM
TOILET - E-HV-4B 380 CFM
EXHAUST AIR DAMPER N.C.
FIRESTAT-SET@125°F WIRE TO SUPPLY FAN STARTER
LOUVER & WIRE MESH SCREEN
LOW LIMIT THERMO-STAT SET@ 40°F
FREEZE STAT-SET @35°F WIRE TO SUPPLY FAN STARTER
SUPPLY FAN (TYP.) HV-3 3,550 CFM HIGHER SPEED 1,775 CFM LOWER SPEED HV-4 3240 CFM
O.A. AMD N.C. HV-3 3,550 CFM HV-4 3,240 CFM
STM. VALVE N.O.
ROLL STORAGE 3,550 CFM-HI SPEED 1,775 CFM-LO SPEED DELIVERY & MAIL 3,240 CFM
DISCHARGE SUBMASTER THERMOSTAT ROOM MASTER THERMOSTAT "OCCUPIED" OPERATION
WIRE TO LOAD SIDE OF SUPPLY FAN STARTER
MAIN AIR
"OCCUPIED" EP WIRE TO LOAD SIDE OF SUPPLY FAN STARTER
OCCUPIED-UNOCCUPIED OPERATION SWITCH
"UNOCCUPIED" RM THERMOSTAT
CONTROLLER

MASTER-SUBMASTER RESET SCHEDULE			
RETURN AIR TEMP. °F	SUBMASTER RESET POINT °F		
	E.HV-3	E.HV-4	
72	96	80	
78	60	60	

EASY KASTER HOOD SEE DETAIL ON THIS DWG
AUTO TEMP CONTROL PANEL TO SYSTEM HV-3
ROOM THERMOSTAT
DARK RM.
ROLL STORAGE
PRESS RM.
REMELT POT
COMP AREA
EDITORIAL
STUDIO
PROOF
SPORTS
BUS. MGR.
GEN. MGR.
WAITING
PUBLISHER
VAULT
MEN
LOBBY
MACH. SHOP
STOR.
LUNCH & ASS'BLY
ADVERTISING
AD. MGR.
SHOWERS
TOILET
LOCKER RM.
TRUCK PORT
DELIV. & MAIL
BOILER RM.
ELECTRICAL RM.
LOWER ROOF LEVEL
TO SYSTEM HV-1
TO SYSTEM HV-2
TO SYSTEM HV-4
TO ROOF EXH. FAN E-HV-3
TO ROOF EXH. FAN E-HV-4
TO ROOF EXH. FAN E-HV-2
TO ROOF EXH. FAN E-HV-1
TO ROOF EXH. FAN E-HV-5
TO ROOF EXH. FAN E-HV-6
TO ROOF EXH. FAN E-HV-7
TO ROOF EXH. FAN E-HV-8
TO ROOF EXH. FAN E-HV-9
TO ROOF EXH. FAN E-HV-10
TO ROOF EXH. FAN E-HV-11
TO ROOF EXH. FAN E-HV-12
TO ROOF EXH. FAN

C- STEAM VALVES
O- CONDENSATE VALVES
H- CHEMICAL FEEDER VALVES
FF- HOT WATER VALVES
W- CHILLED WATER VALVES
AA- CONDENSER WATER "
G- COLD WATER VALVES

ROOF & PENTHOUSE PLAN

SCALE: 1/8" = 1'-0"

BOILER ROOM PLAN

SCALE: 1/4" = 1'-0"

NOTE: ALL ELEVATIONS ARE WITH REFERENCE TO 1ST FLR. LEVEL 0'-0"

SECTION '1-1'

SCALE: 1/4"=1'-0"

SECTION '2-2'

SCALE: 1/4"=1'-0"

SECTION '3-3'

SCALE: 1/4"=1'-0"

SECTION '4-4'

SCALE: 1/4"=1'-0"

SECTION '5-5'

SCALE: 1/4"=1'-0"

SECTION '6-6'

SCALE: 1/4"=1'-0"

SECTION '7-7'

SCALE: 1/4"=1'-0"

EVENING RECORDER			
W.J. KLINE & SON INC., PUB. — AMSTERDAM, N.Y.			
HEATING, VENTILATING & AIR CONDITIONING			
MECH. EQUIP'T. RM., BOILER RM. & SECTIONS			
LOCKWOOD GREENE ENGINEERS, INC.			
200 PARK AVE. NEW YORK 17, N.Y.			
MADE BY	NAME	DATE 6/15/66	JOB NO. 65109
CHECKED BY	SHZ	6/15/66	DWG. NO. M-2
APPROVED		6/15/66	
SCALE	AS SHOWN		DATE: APRIL 4, 1966

NO	DATE	REVISION	BY	CHK	APPR.

HEATING, VENTILATING AND AIR CONDITIONING UNIT SCHEDULE

UNIT No. & SYSTEM No.	UNIT LOCATION	AREA SERVED	FANS: CFM	S.P. IN H_2O (3)	MAX. OV. F.P.M.	APPROX. RPM	APPROX. BHP	MOTOR H.P.	DRIVE	ROT. & DISCH.	TYPE BLADE (CURVED)	STEAM HEATING COIL: UNIT No.	AIR DATA: MAX. FACE VEL. F.P.M.	AIR DATA: TEMP °F IN	AIR DATA: TEMP °F OUT	STEAM DATA: P.D. IN H_2O	STEAM DATA: PRESS. P.S.I.G.	STEAM DATA: CAP. LB/HR.	CONTROL VALVE: CAP. LB/HR.	CONTROL VALVE: P.D. P.S.I.	CONTROL VALVE: QUANT.	TRAP CAP LBS/HR.	COIL BANK DATA: FACE AREA	COIL BANK DATA: NOM. TUBE LENGTH NUMBER	COIL BANK DATA: TUBE FACE	COIL BANK DATA: NO. ROWS	COOLING COIL: UNIT No.	AIR DATA: MAX. FACE VEL. F.P.M.	AIR DATA: INITIAL AIR °F D.B.	AIR DATA: INITIAL AIR °F W.B.	AIR DATA: FINAL AIR °F D.B.	AIR DATA: FINAL AIR °F W.B.	WATER DATA: P.D. IN H_2O	WATER DATA: TEMP °F INITIAL	WATER DATA: TEMP °F FINAL	WATER DATA: GPM	WATER DATA: FRICTION FT H_2O	WATER DATA: TYPE CIRCUIT	WATER DATA: CONTROL VALVE P.D. P.S.I.	COIL BANK DATA: COIL CASE MATERIAL	COIL BANK DATA: SIZE HEAD	COIL BANK DATA: SIZE TUBE	COIL BANK DATA: SIZE FACE	COIL BANK DATA: No. CELLS	COIL BANK DATA: ARRAGT. HIGH	COIL BANK DATA: ARRAGT. WIDE	COIL BANK DATA: No. ROWS	REMARKS
AC-1	MECH. EQUIP ROOM	OFFICES	10,750	2¼	2,460	1925	7.5	10	V-BELT	CCW UBD	B'WARD	HC-AC-1A	580	51.28	82.00	0.075	2	366	366	5	1	1,250	8.00 / 9.2	42 / 48	2	1	CC-AC-1	555	81.2	67.0	56.5	55.0	0.56	45	55	81	6.5	DOUBLE	4	19.4	96	21	1	1	1	6	
HV-1	DO.	PRESSROOM	14,500	2 IN. OF 1¾	2215	1525	10.50	15		CW UBD	B'WARD	HCHV-1	570	63.50	84.00	0.065	2	333	333	5	1	1,170	12.0 / 13.5	48 / 56	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
HV-2	DO.	COMPOSING R.M.	11,580	2 IN. OF 1½	2215	1525	8.4	10		CW UBD	B'WARD	HCHV-2A	545	53.58	80.00	0.060	2	340	340	5	1	1,180	10.66 / 10.6	48 / 48	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
HV-3	ROLL STOR.	ROLL STOR.	3,480 / 1,775	1¾	2300	1090	1.82	2		CW THD	F.WARD	HC-HV-3A / HC-HV-3B	790	710 / 220	40 / 90	0.120 / 0.220	2 / 2	198 / 220	198 / 220	5 / 5	1 / 1	690 / 770	4.5 / 4.5	33 / 33	1½ / 1½	1 / 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
HV-4	DELIVERY & MAIL	DELIVERY & MAIL	3,240	1¾	2300	1080	1.60	2		CW THD	F.WARD	HC-HV-4A / HC-HV-4B	725	710 / 455	40 / 80	0.115 / 0.115	2 / 2	180 / 144	180 / 144	5 / 5	1 / 1	635 / 500	4.5 / 4.5	33 / 33	1½ / 1½	1 / 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

NOTES:
1. COIL BANK TO CONSIST OF 2 CELLS - 1 HIGH - 2 WIDE ON SYSTEM AC-1, HV-1 & HV-2. & PROVIDE VARIABLE SPEED DRIVE TO COVER THE RANGE BETWEEN PRESENT & FUTURE R.P.M.
2. 'F' DENOTES FUTURE FAN PERFORMANCE. 'P' DENOTES PRESENT FAN PERFORMANCE.
4. THROWAWAY TYPE FILTERS.

UNIT No.	FILTER *): FRICTION (CLEAN) IN. H_2O	UNIT FILTER SIZE IN. HIGH	WIDE	THICK	ARRAGT.	QUANTITY	REMARKS
F-AC-1	0.16	20	25	2	ANGLE	12	
F-HV-1	0.13	20	20	2		24	SEE NOTE (2)
F-HV-2	0.13	20	25	2		15	SEE NOTE (2)
F-HV-3	0.10	16	20	2		6	2-SPEED FAN MOTOR. FAN PERFORMANCE BASED ON HIGHER SPD.
F-HV-4	0.10	16	20	2		6	

COIL CONNECTIONS SCHEDULE

UNIT No.	PIPE SIZE, INCHES A	B	C	D	E	F	REMARKS
CC-AC-1	3	2½	-	-	-	-	
HC-AC-1A	4	4	3	1¼	3	3	
HC-HV-1	4	4	3	1¼	3	3	
HC-HV-2A	4	4	3	1½	3	3	
HC-HV-3A	3	3	2½	1½	3	-	
HC-HV-3B	4	4	3	1½	4	-	
HC-HV-4A	3	3	2½	1½	3	-	
HC-HV-4B	3	3	2½	1¼	3	-	

FAN SCHEDULE

UNIT No.	UNIT LOCATION	SYSTEM SERVED	TYPE SERVICE	TYPE	C.F.M.	S.P. IN. H_2O	MAX. O.V. F.P.M.	APPROX. R.P.M.	MAX. TIP SPEED F.P.M.	MAX. B.H.P.	MIN. MOTOR H.P.	DRIVE TYPE	ROT. & DISCH.	BLADE TYPE (CURVED)	APPROX. WHEEL DIA. IN.	REMARKS
R-AC-1	MECH. EQUIP. ROOM	AC-1	RETURN	IN-LINE CENTRIF.	8,045	1¼	900	785	—	2.27	3	V-BELT	—	B'WARD	27	
R-HV-1	DO.	HV-1	RETURN	IN-LINE CENTRIF.	15,000	1	925	565	—	3.62	5	DO.	—	DO.	40	
R-HV-2	DO.	HV-2	RETURN	IN-LINE CENTRIF.	9,000	1	1,000	805	—	2.28	3	DO.	—	DO.	27	
E-AC-1A	ROOF	AC-1	TOIL. EXH.	ROOF CENTRIF.	310	½	—	1,340	3,860	0.08	1/6	DO.	—	DO	11	
E-AC-1B	DO.	AC-1	TOIL. EXH.	DO.	290	½	—	1,330	3,830	0.08	1/6	DO.	—	DO	11	
E-AC-1C	DO.	AC-1	TOIL. EXH.	DO.	350	½	—	1,360	3,915	0.083	1/6	DO.	—	DO	11	
E-AC-1D	DO.	AC-1	DARK RM. EXH.	DO.	725	½	—	1,195	4,130	0.153	¼	DO.	—	DO.	13	
E-HV-1A	DO.	HV-1	HOOD EXH.	DO.	450	1⅜	—	1,365	5,920	0.670	1	DO.	—	DO.	16½	NOTE (2)
E-HV-1B	DO.	HV-1	HOOD EXH.	DO	450 △	1⅜	—	1,365	5,920	0.670	1	DO.	—	DO.	16½	NOTE (2)
E-HV-2A	DO.	HV-2	HOOD EXH.	DO.	500	1	—	1,050	5,710	0.410	½	DO.	—	DO.	13	NOTE (2)
E-HV-2B	DO.	HV-2	DARK RM. EXH.	DO.	1810	5/8 △	—	1,084	4700 △	0.360	½	V-BELT	—	B'WARD	24½ △	120 V - 1Ø - 60C
E-HV-3	DO.	HV-3	GEN. EXH.	DO.	3350 / 1258	⅛	—	678 / 340	4,320 / 2,700	0.65	¾	DO.	—	DO.	24	2 SPEED NOTE (1)
E-HV-4A	DO.	HV-4	TRUCK PORT EXH.	DO.	2860	⅜	—	692	3,950	0.38	1/2	DO.	—	DO	22	
E-HV-4B	DO.	HV-4	TOIL. EXH.	DO.	380	½	—	1,370	3,960	0.09	1/6	DO.	—	DO.	11	
E-HV-5	DO.	BOILER RM.	EXH.	DO.	910	⅜	—	1110	3,850	0.13	1/6	DO.	—	DO.	13	
E-HV-6	DO.	M.E. RM.	EXH.	DO	4,000	⅜	—	518	3,825	0.55	¾	DO.	—	DO.	16½	
E-HV-7	DO.	ELECTRIC EQUIP.	EXH.	DO.	4000 / 500	⅜	—	1590	5,500	0.37	½	DO.	—	DO.	13	2 SPEED (NOTE (1))
E-HV-8	DO	JANITOR TOILET	EXH.	ROOF PROPEL	90	⅛	—	1,550	3,325	—	1/60	DIRECT	—	PROP.	8	
E-HV-9	DO.	JANITOR KITCHEN	EXH.	ROOF PROPEL	185	⅛	—	1,550	4,058	—	1/40	DIRECT	—	PROP.	10	

NOTE:
1. PERFORMANCE BASED ON HIGHER SPEED.
2. SPECIAL CONSTRUCTION, SEE SP. 18.

UNIT HEATER SCHEDULE (STEAM)

UNIT No.	UNIT LOCATION	TYPE UNIT	AIR DATA: CFM	AIR DATA: TEMP °F ENT.	AIR DATA: TEMP °F FINAL	STEAM DATA: CAP. LB/HR	STEAM DATA: PRESS P.S.I.G.	STEAM DATA: TRAP CAP LB/HR.	MOTOR H.P.	RPM	QUANTITY	REMARKS
UH-1&2	TRUCK PORT	HORZ PROP.	1214	60	127	90	2	315	1/8	1550	2	
UH-3&4	M.E. RM.	DO.	1214	60	127	90	2	315	1/8	1550	2	
UH-5	BOILER RM.	DO.	1214	60	127	90	2	315	1/8	1550	1	

FAN-COIL UNIT SCHEDULE

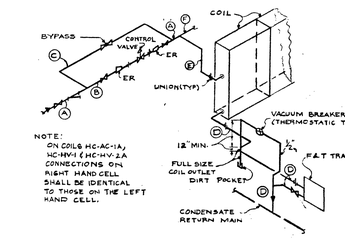
UNIT No.	LOCATION	FAN DATA: CFM	FAN DATA: EXT'L S.P. IN H_2O	FAN DATA: RPM	COOLING (1): POWER* INPUT WATTS	COOLING (1): GPM	COOLING (1): P.D. FT/H₂O	COOLING (1): CAPACITY BTU/HR SENSIBLE	COOLING (1): CAPACITY BTU/HR TOTAL	HEATING (2): GPM	HEATING (2): P.D. FT H_2O	HEATING (2): CAPACITY BTU/HR	No. ROWS	No. UNITS	COIL CONN SIZE INCHES: A	B	C	REMARKS
FC-1	AD. MGR.	330	—	568 (3)	62	1.46	1.45	6,200	7,300	1.46	1.45	8,650	3	1	¾	¾	¾
FC-2 to 4	ADV'TG.	430	—		75	2.10	3.00	8,500	10,500	2.10	3.00	7,400	3	3			
FC-5	LAYOUT	400	—		110	2.96	6.60	11,800	14,800	2.96	6.60	11,667	3	1			
FC-6	LUNCH & ASS'N	430	—		75	2.10	3.00	8,500	10,500	2.10	3.00	14,700	3	1			
FC-7&8	Dr.	330	—		62	1.46	1.45	6,200	7,300	1.46	1.45	11,550	3	2			
FC-9	CIRCUL.	430	—		75	2.10	3.00	8,500	10,500	2.10	3.00	14,610	3	1			
FC-10	VESTID.	600	—		110	2.96	6.60	11,800	14,800	2.96	6.60	36150 (5)	3	1			
FC-11	BUSINESS	433	—		75	2.10	3.00	8,500	10,500	2.96	3.30	12,610	3	1			
FC-12	OFFICE (4S)	210	—		44	0.87	0.54	3,900	4,350	0.87	0.54	6,275	3	1			
FC-13	BUS. MGR.	210	—		44	0.87	0.54	3,900	4,350	0.87	0.54	7,215	3	1			
FC-14	GEN. MGR.	330	—		62	1.46	1.45	6,200	7,300	1.46	1.45	11,700	3	1			
FC-15	PUBLISHER	430	—		75	2.10	3.00	8,500	10,500	2.10	3.00	12,300	3	1			
FC-16&17	Dr.	330	—		62	1.46	1.45	6,200	7,300	1.46	1.45	8,500	3	2			
FC-18	INT. & LIB.	600	—		110	2.96	6.60	11,800	14,800	2.96	6.60	11,700	3	1			
RC-19&20	EDITORIAL	600	—		110	2.96	6.60	11,800	14,800	2.96	6.60	8,700	3	4			
FC-21&22	ED. MGR.	430	—		75	2.10	3.00	8,500	10,500	2.10	3.00	6,750	3	2			

NOTE:
(1) COOLING CAPACITY BASED ON 78°F DB & 65°WB ENTERING AIR CONDITIONS & 45°F ENTERING WATER TEMP.
(2) HEATING CAPACITY BASED ON 70°F ENTERING AIR TEMP. & 155°F MIN. ENTERING WATER TEMP. & LOW SPEED OPERATION UNLESS OTHERWISE NOTED.
(3) 3 SPEEDS 650, 850 & 1050 RPM.
(4) INPUT AT 1050 RPM.
(5) @ 1050 RPM.

PUMP SCHEDULE

UNIT No.	LOCATION	SERVICE	TYPE	GPM	TOTAL HEAD FT H_2O	FLUID TEMP °F	RPM	MAX B.H.P	MIN. MOTOR H.P.	REMARKS
P-1	M.E. RM.	CHILLED WATER	CENTRIF.	174	85	45-55	1750	6.12	10	FUTURE OPERATION
				135	NOTE (1)	45-55	1750	5.1	—	PRESENT OPERATION
P-2	M.E. RM.	CONDS. W.	CENTRIF.	218	85	100	1750	7.44	10	
P-3	M.E. RM.	STAND-BY	CENTRIF.	218	85	45-100	1750	7.6	10	OPERATION AS A COND. W. PUMP
				174	NOTE (2)	45-100	1750	NOTE (2)	—	OPERATION AS A CHILL'D W. PUMP
P-4	M.E. RM.	HOT WATER	CENTRIF.	50	70	22.5	1750	2.5	3	
P-5	M.E. RM.	HOT WATER STAND-BY	CENTRIF.	50	70	22.5	1750	2.5	3	
CP-1	BOILER RM.	STM. COND.				SEE SPEC.				

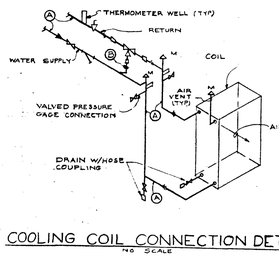
NOTES:
1. SELECTION IS BASED ON FUTURE OPERATION. PRESENT FLOW WILL BE OBTAINED BY THROTTLING THE FLOW AT THE PUMP DISCHARGE. NO CHANGE OF IMPELLER IS INTENDED.
2. SELECTION BASED ON OPERATION AS A CONDENSER WATER PUMP. FOR PRESENT AND FUTURE CHILLED WATER OPERATION, FLOW SHALL BE THROTTLED AT THE PUMP DISCHARGE.

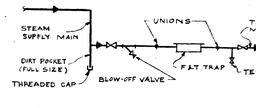


NOTE: ON COILS HC-AC-1A, HC-HV-1 & HC-HV-2A CONNECTIONS ON RIGHT HAND CELL SHALL BE IDENTICAL TO THOSE ON THE LEFT HAND CELL.

COOLING COIL CONNECTION DETAIL

NO SCALE

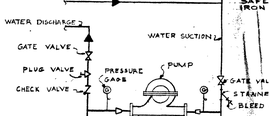




TYPICAL END OF STEAM MAIN CONNECTION

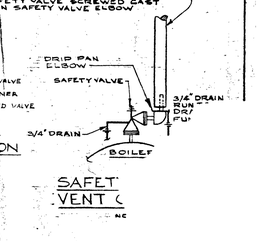
(TYPICAL HOOK-UP FOR ALL LOCATIONS WHERE SYMBOL OR "F&T TRAP" IS INDICATED ON PIPING.)

NO SCALE



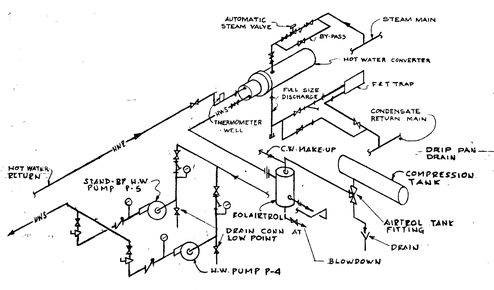
TYPICAL WATER PUMP CONNECTION

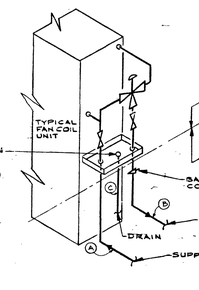
NO SCALE



SAFETY VENT

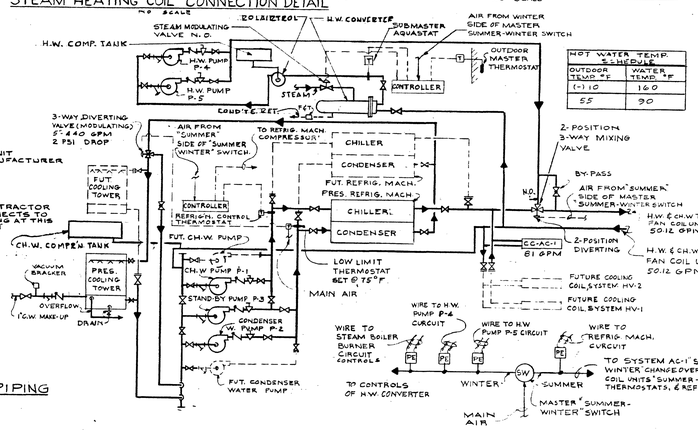
NO SCALE





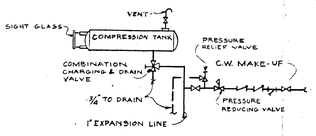
STEAM HEATING COIL CONNECTION DETAIL

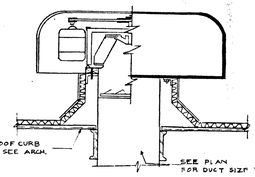
NO SCALE



COMPRESSION TANK DETAIL

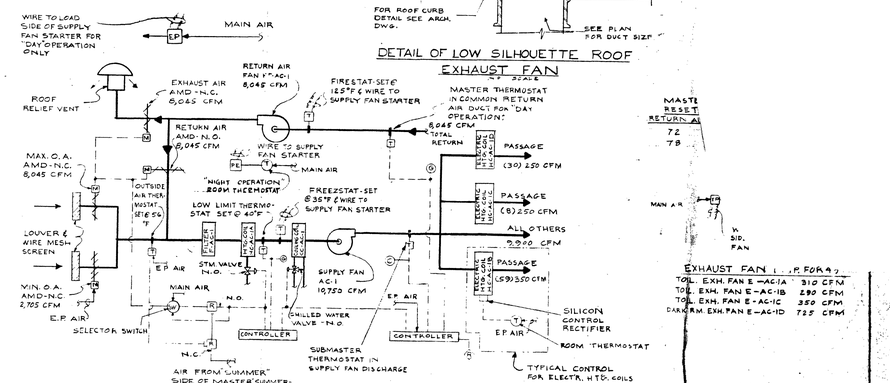
NO SCALE





DETAIL OF LOW SILHOUETTE ROOF EXHAUST FAN

NO SCALE



MASTER RESET RETURN AIR 72 78

MAIN AIR

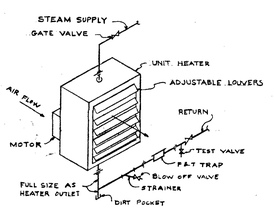
N. SID. FAN

EXHAUST FAN [illegible] F. FOR AC-1

TOIL. EXH. FAN E-AC-1A	310 CFM
TOIL. EXH. FAN E-AC-1B	290 CFM
TOIL. EXH. FAN E-AC-1C	350 CFM
DARK RM. EXH. FAN E-AC-1D	725 CFM

HOT WATER CONVERTER CONNECTION DETAIL

NO SCALE

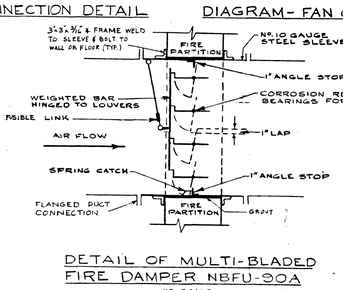


HORIZ. PROP. UNIT HEATER DETAIL

NO SCALE

DIAGRAM - FAN COIL UNIT PIPING

NO SCALE

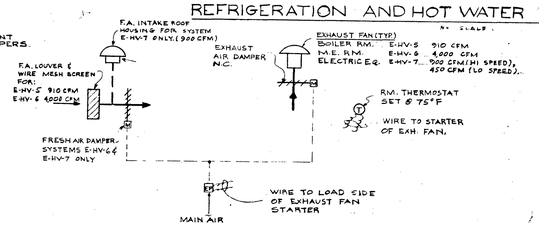


DETAIL OF MULTI-BLADED FIRE DAMPER NBFU-90A

NO SCALE

REFRIGERATION AND HOT WATER FLOW & CONTROL DIAGRAM

NO SCALE



FLOW & CONTROL DIAGRAM

BOILER RM. EXHAUST FAN EF-5, M.E. RM. EXHAUST FAN EF-6, ELECTIC EQUIPMENT RM. EXHAUST FAN EF-7

ELECTRIC HEATING COILS SCHEDULE

UNIT No.	SYSTM SERVED	DUCT SIZE IN.	AIR DATA: CFM	AIR DATA: TEMP °F IN	AIR DATA: TEMP °F OUT	AIR DATA: PRESS. DROP IN W.	OUTPUT KW	No. CIRCUITS	VOLTS	PHASE & CYCLE	REMARKS
HC-AC-1B	AC-1	10-8	350	82.5	103	0.04	2.30	1	208	1/60	
HC-AC-1C	AC-1	10-6	250	82.5	94.5	0.03	0.96	1			
HC-AC-1D	AC-1	10-6	250	82.5	98.5	0.03	1.90	1			
HC-HV-2B	HV-2	18-8	815	57.0	66.0	0.04	2.32	1			
HC-HV-2C	HV-2	14-8	540	57.0	66.0	0.03	1.54	1			
HC-HV-2D	HV-2	16-8	700	57.0	66.0	0.04	2.00	1			

OFFICE AREA SYSTEM AC-1, FLOW & CONTROL DIAGRAM

NO	DATE	REVISION	BY
1	10-19-66	AS PER ADD. NO. 11	SHZ
2	7-5-66	AS PER ADD. NO. 6	SHZ

EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.
HEATING, VENTILATING & AIR CONDITIONING
SCHEDULES & DETAILS
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME L.S.	DATE 4-15-66
CHECKED BY	SHZ	4-15-66
APPROVED	[illegible]	4-15-66

JOB NO. 65109 DWG. NO. M-3
SCALE: NONE DATE APRIL 4, 19[illegible]

PROPERTY LINE

OLD WOODEN FENCE POSTS

PROPERTY LINE

NEW YORK STATE CONC. MONUMENT

N.Y. STATE ROUTE 5-S

PROPERTY LINE

PROPERTY LINE

PLANT
F.F. EL. 420.0'

C.B. #1
TOP 416.7'
INV. 412.7'

INV. 413.0'

15"-29'@ 8.5%

C.B. #2
TOP 416.7'
INV. 412.25'

MANHOLE #3
INV. 410'-0"

INV. 412.42

15"-74'@ 2.5%

8" SAN.

INV. 412.02'
M.H. #1
INV. 412.02'

INV. 411.55'

10"-110'@ 2.0%

C.B. #3
TOP 418.7'
INV. 413.75'

10"-95'@ .30%

C.B. #4
TOP 418.7'
INV. 414.04'

10"-64'@ .23%

M.H. #5
INV. 414.15'

INV. 414.36'

C.B. #5
TOP 418.7'
INV. 414.7'

6"-87'@ 4.5%

C.B. #6
TOP 418.7'
INV. 414.5'

6"-42'@ .5%

18"-78'@ 1.5%

INV. 411.0
HEADWALL & SPLASH

3" C.W. SERVICE
6" GAS SERVICE
6" SPRINKLER SERVICE

PROPERTY LINE

GATE VALVES IN BOX

12" C.I. WATER MAIN

8" INTERMEDIATE PRESSURE GAS MAIN

VENNER AVENUE

SEWAGE LIFT STATION

CONNECT TO SEWAGE LIFT STATION
INV. 404

8" SAN. SEWER

6" PUMP DISCHARGE

No	DATE	REVISION	BY	CHK	APPR.
1	6-6-66	RELOCATED SAN SEWER	LD	LD	

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

PLOT PLAN
PLUMBING

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

	INIT.	DATE
MADE BY	P.B.	4/15/66
CHECKED BY	L.D.	4/15/66
APPROVED	[illegible]	4/15/66

JOB NO. 65109
DWG. NO. M-4
SCALE 1" = 20'-0"
DATE APRIL 4, 1966

STEWART PRODUCTS INC. PORT WASHINGTON, N.Y.

K - Gas Shut off Valves
G - Cold Water "
M - Hot " "
O - Recirculator "

NOTE: PROVIDE A "KNIGHTWARE" ACID NEUTRALIZING BASIN WITH MARBLE CHIPS IN DARK ROOM NO. 26 FOR SINK.

① BROWN SINK
② GRAFCO ETCHING TABLE
③ GRAFCO SINK
④ ELROD

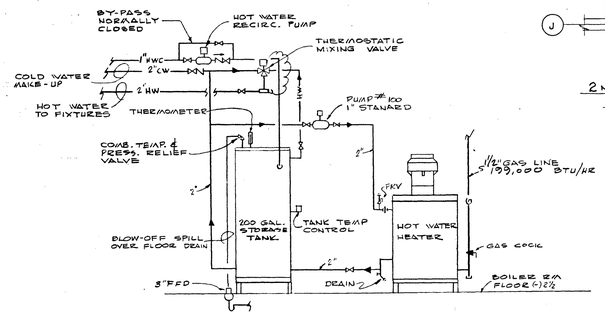
No	DATE	REVISION	BY	CHK	APPR.
3	10-5-66	AS PER ADDENDUM NO. 3	LD		
2	4-20-66	AS PER ADDENDUM NO. 1	RB		

EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

PLUMBING
FIRST FLOOR PLAN

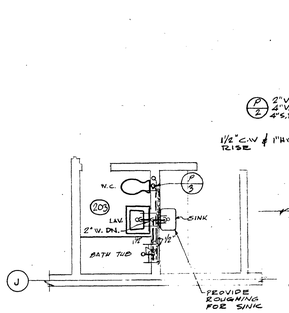
LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	NAME	DATE	JOB NO.	DWG. NO.
	R.S.D.	4-15-66		
CHECKED BY	L.D.	4-15-66	65109	M-5
APPROVED		4-15-66		
SCALE	1/8" = 1'-0"		DATE	APRIL 4, 1966



HOT WATER HEATER & STORAGE TANK HOOK-UP

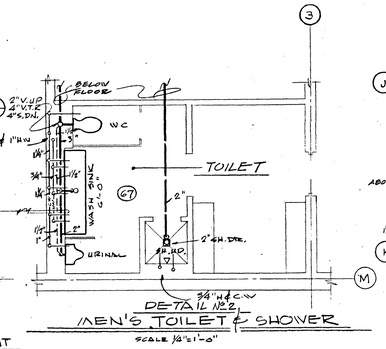
NO SCALE



DETAIL Nº 1

2ND. FLOOR APARTMENT TOILET & KITCHEN

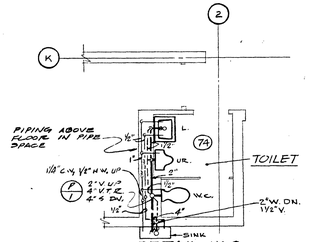
SCALE ½"=1'-0"



DETAIL Nº 2

MEN'S TOILET & SHOWER

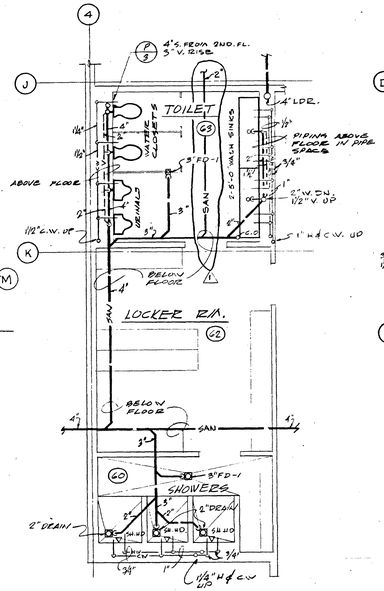
SCALE ½"=1'-0"



DETAIL Nº 3

MEN'S TOILET

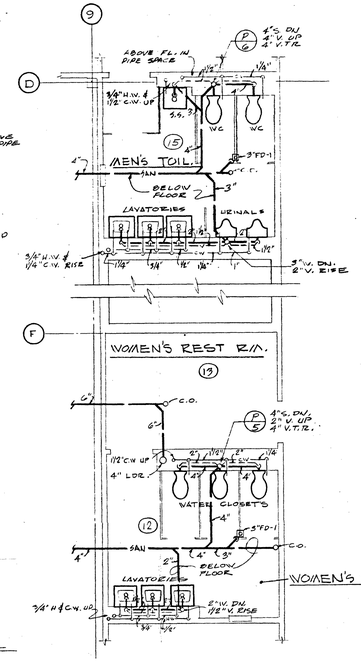
SCALE ½"=1'-0"



DETAIL Nº 4

TOILET, LOCKER RM & SHOWERS

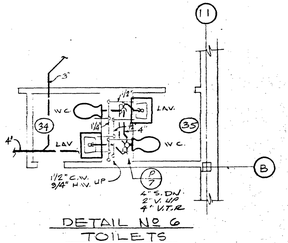
SCALE ½"=1'-0"



DETAIL Nº 5

MEN & WOMEN'S TOILET

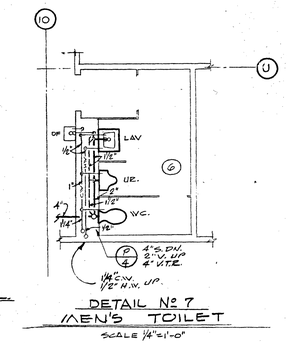
SCALE ⅛"=1'-0"



DETAIL Nº 6

TOILETS

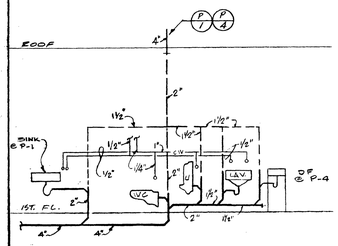
SCALE ¼"=1'-0"



DETAIL Nº 7

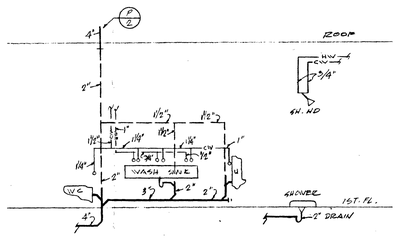
MEN'S TOILET

SCALE ¼"=1'-0"



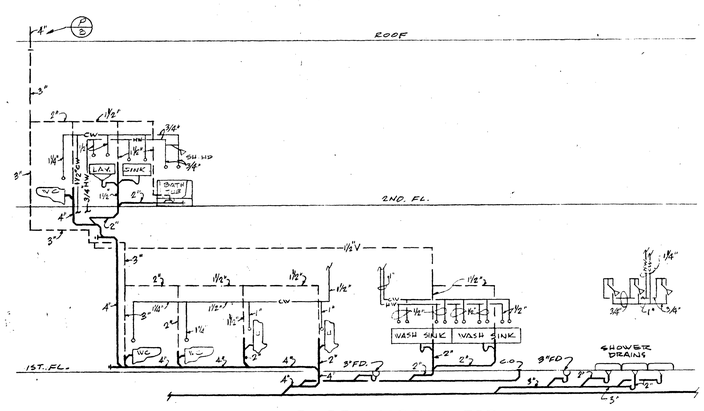
RISER DIAGRAM FOR DETAILS Nºs 3 & 7

NO SCALE



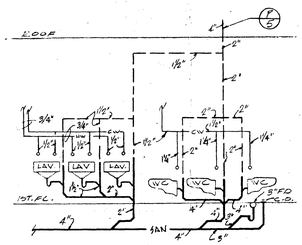
RISER DIAGRAM FOR DETAIL Nº 2

NO SCALE



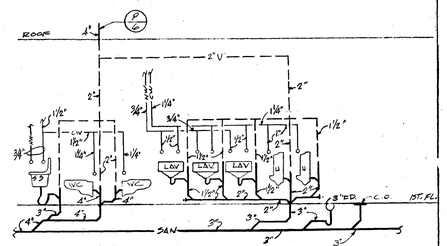
RISER DIAGRAM FOR DETAILS Nº 1 & 4

NO SCALE



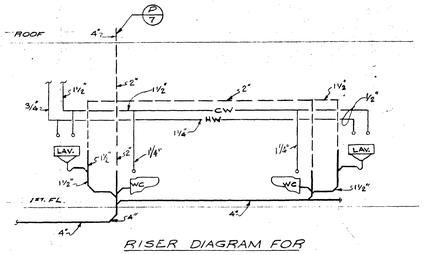
RISER DIAGRAM FOR DETAIL Nº 5

NO SCALE



RISER DIAGRAM FOR DETAIL Nº 5

NO SCALE



RISER DIAGRAM FOR DETAIL Nº 6

NO SCALE

FIXTURE CONNECTION SCHEDULE					
FIXTURE	SOIL OR WASTE	VENT	COLD WATER	HOT WATER	REMARKS
WATER CLOSET	4"	2"	1½"	——	——
LAVATORY	1½"	1½"	½"	½"	——
URINAL	2"	1½"	1"	——	——
SERVICE SINK	3"	1½"	¾"	¾"	——
SHOWER	2"	1½"	¾"	¾"	——
WASH SINK	2"	1½"	½"	½"	NUMBER OF CONN SHOWN ON PLAN
DRINKING FOUNTAIN	1½"	½"	½"	——	——
BATH TUB	1½"	1½"	¾"	¾"	WITH SHOWER

NO	DATE	REVISION	BY	CHK	APPR.
1	4-28-66	AS PER ADDENDUM Nº 1	RS		

EVENING RECORDER

W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

PLUMBING

DETAILS & DIAGRAMS

LOCKWOOD GREENE ENGINEERS, INC.

200 PARK AVE, NEW YORK 17, N.Y.

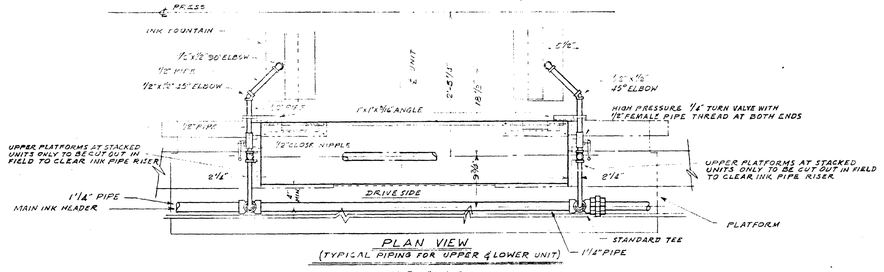
	NAME	DATE
MADE BY	L.K.	4-15-66
CHECKED BY	L.D.	4-15-66
APPROVED	[illegible]	4-15-66

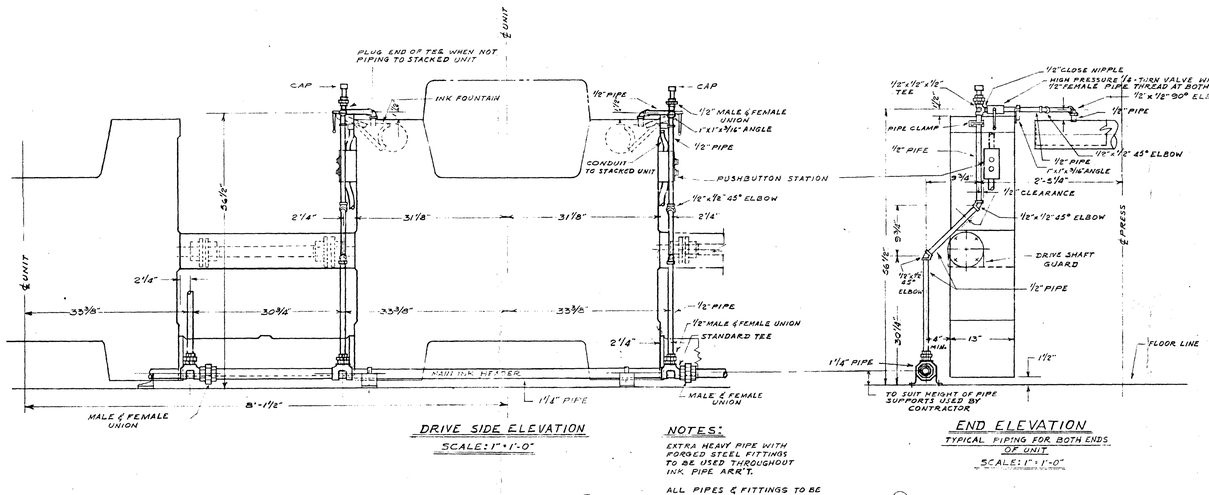
JOB NO. 65109

DWG. NO. M-6

SCALE AS NOTED

DATE APRIL 4, 1966

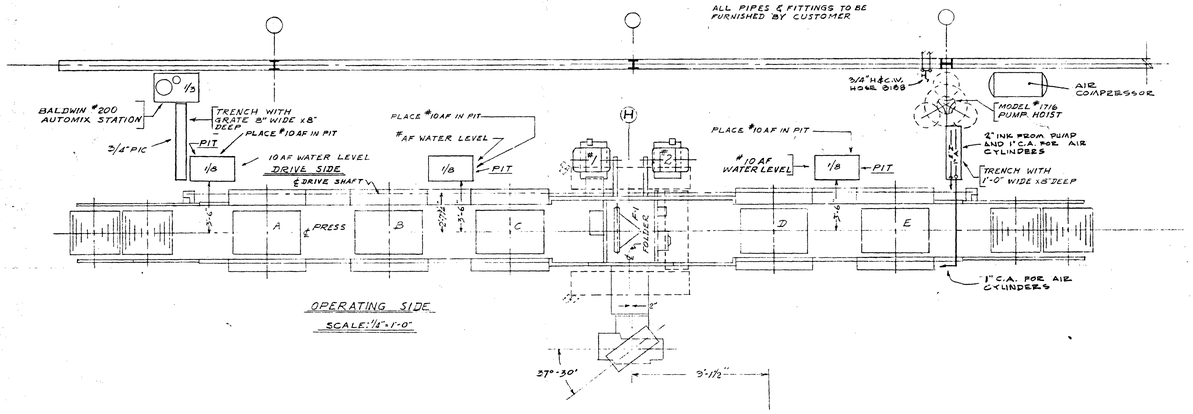




NOTES:

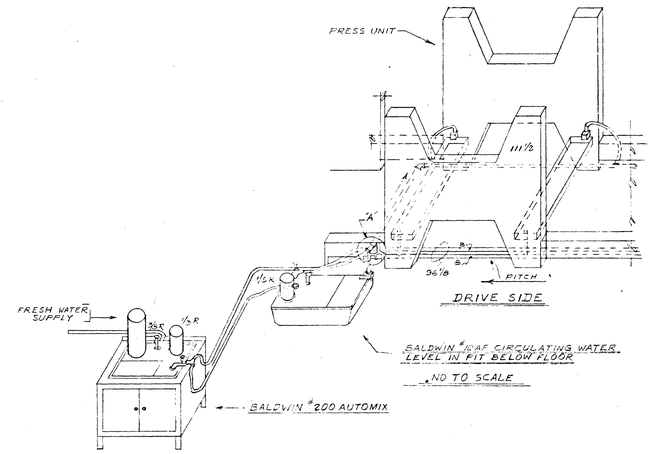
EXTRA HEAVY PIPE WITH FORGED STEEL FITTINGS TO BE USED THROUGHOUT INK PIPE ARR'T.

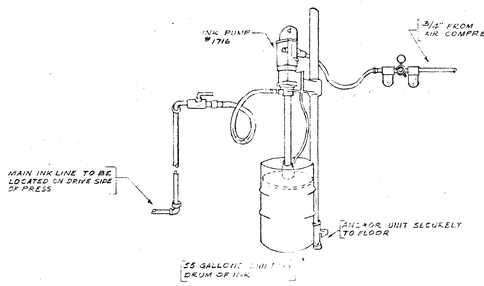
ALL PIPES & FITTINGS TO BE FURNISHED BY CUSTOMER



FLOOR PLAN

SCALE 1/4"=1'-0"





NOTE:

COMPRESSED AIR REQUIREMENTS.

1. MINIMUM COMPRESSED AIR AT PUMP - 70 LBS. PER SQUARE INCH AT RATE OF 2 TO 3 CUBIC FEET PER MINUTE TO GIVE INK SUPPLY SYSTEM PROPER OUTPUT AT INK FOUNTAINS WHEN FILLING
2. A COMPRESSED AIR SUPPLY OF 1 CFM. AT 80 P.S.I. IS REQUIRED FOR AIR CYLINDER ON OPERATING SIDE OF EACH UNIT FOR IMPRESSION, INK AND WATER FEED THROWOFF ARRANGEMENT.

NOTES:

1 – FOR ARRANGEMENT OF UNITS & FOLDER REFER TO GOSS CO. DRAWING # IP-2320

2 – FOR ARRANGEMENT OF INK PIPING AT UNITS REFER TO GOSS CO. DRAWING #6P-3217

TYPICAL INK PIPING SYSTEM FOR 9035 URBANITE PRESS

INK PUMP

NOT TO SCALE

No	DATE	REVISION	BY	CHK	APPR.

EVENING RECORDER

W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

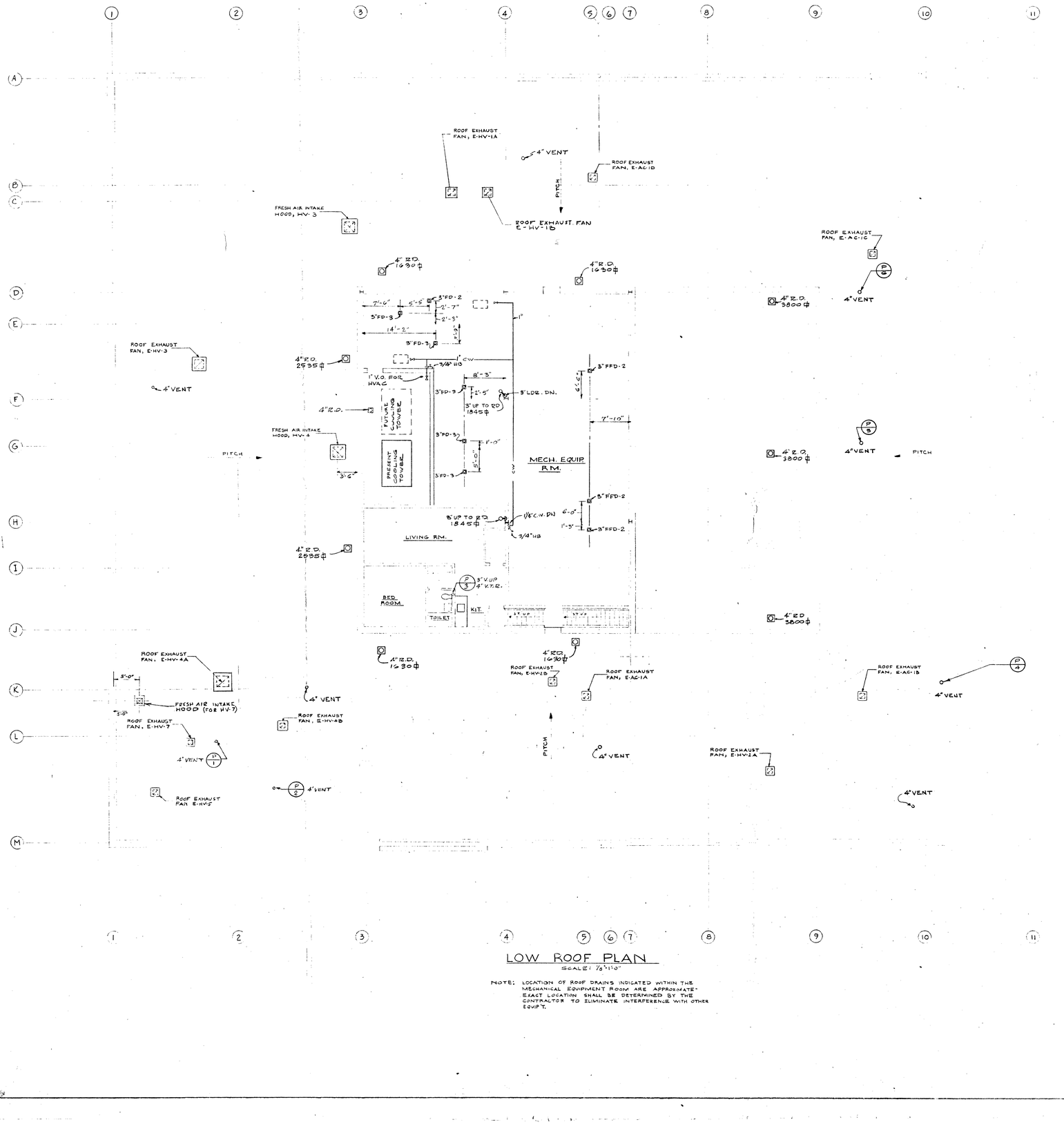
PLUMBING

INK PIPING SYSTEM

LOCKWOOD GREENE ENGINEERS, INC.

200 PARK AVE. NEW YORK 17, N.Y.

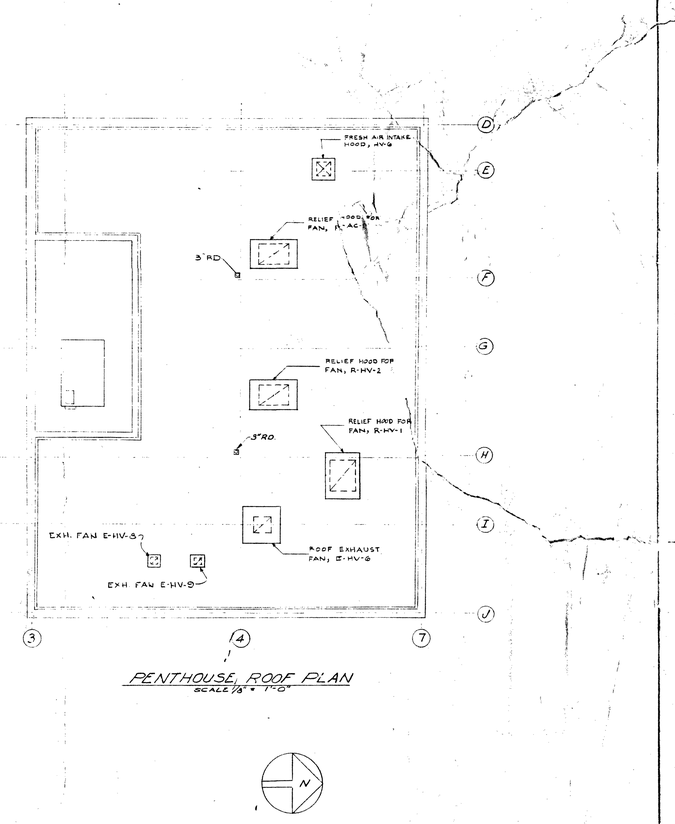
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MADE BY	[illegible]	[illegible]	65109	M-7
CHECKED BY	[illegible]	[illegible]		
APPROVED	[illegible]	4-15-66		
SCALE	NOTED		DATE	APRIL 4, 1966



LOW ROOF PLAN

SCALE: 1/8"=1'-0"

NOTE: LOCATION OF ROOF DRAINS INDICATED WITHIN THE MECHANICAL EQUIPMENT ROOM ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR TO ELIMINATE INTERFERENCE WITH OTHER EQUIPT.



PENTHOUSE, ROOF PLAN

SCALE 1/8" = 1'-0"

N

NO.	DATE	REVISION

EVENING RECORDER

W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

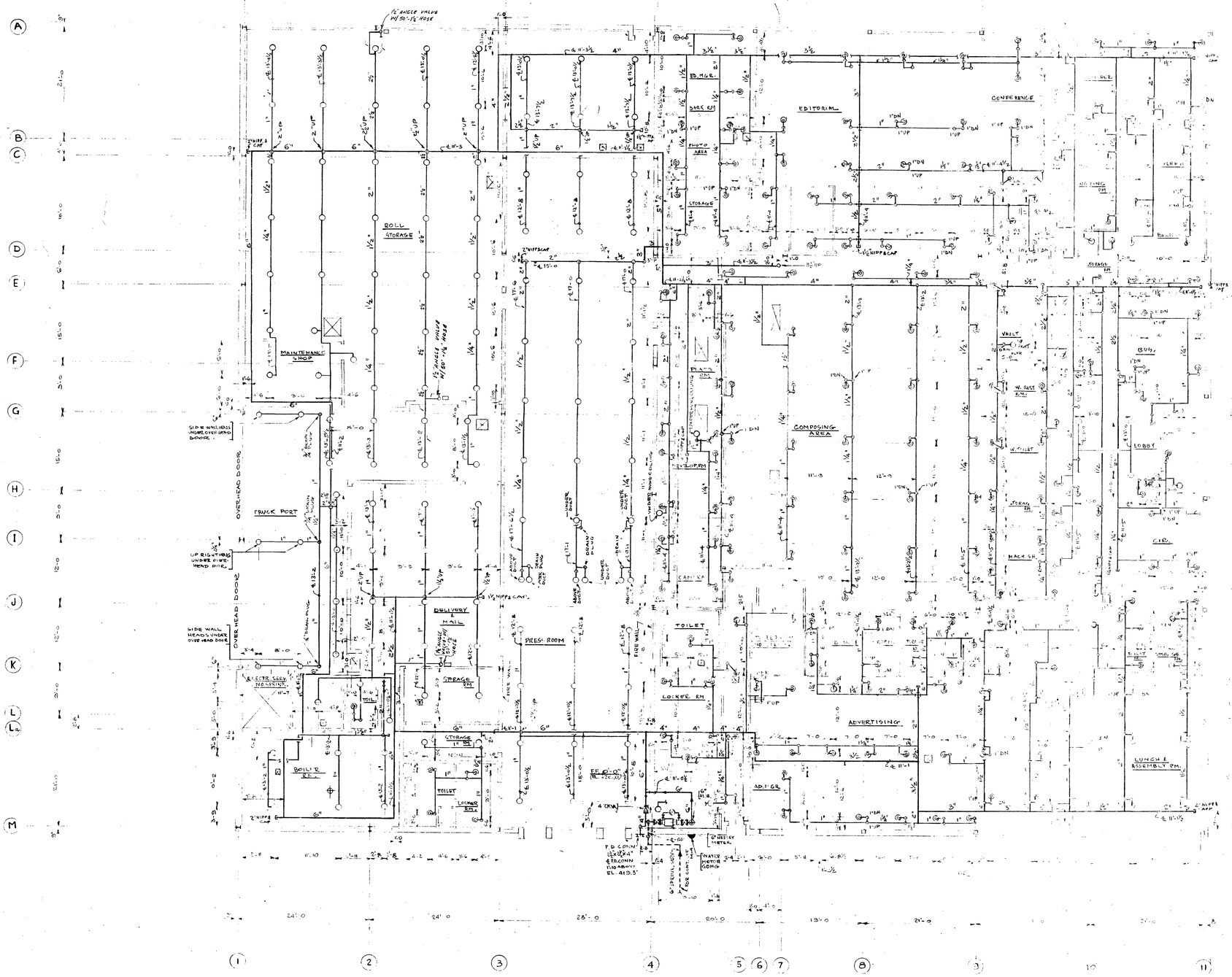
HVAC & PLUMBING

ROOF PLAN

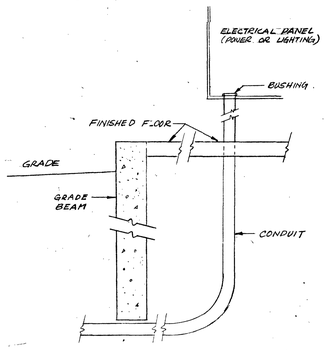
LOCKWOOD GREENE ENGINEERS, INC.

200 PARK AVE. NEW YORK 17, N.Y.

	NAME	DATE	JOB NO.	DWG. NO.
MADE BY		4/15/66	65109	M-3
CHECKED BY		4/15/66		
APPROVED		4/15/66		
SCALE			DATE	APRIL 4, 19

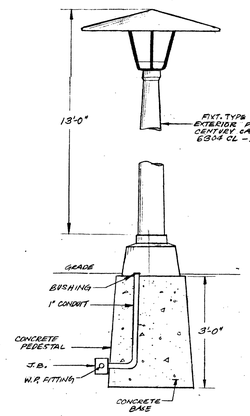

MAINTENANCE SHOP
ROLL STORAGE
TRUCK PORT
OVERHEAD DOOR
SIDE WALL HEADS UNDER OVERHEAD DOOR
DELIVERY
MAIL
PRESS ROOM
STORAGE
ELECTRICAL EQUIPMENT
BOILER RM.
TOILET
LOCKER RM.
EDITORIAL
CONFERENCE
PHOTO AREA
DARK RM.
COMPOSING AREA
ADVERTISING
VAULT
LOBBY
LUNCH & ASSEMBLY RM.
MACH. SH.
STORAGE
W. CLOSET
LAVATORY
CAP
1½" ANGLE VALVE W/50-1½" HOSE
1½" ANGLE VALVE W/80-1½" HOSE
4" WATER METER
F.D. CONN. 4"x2½"x2½" & 2½" CONN. FLOOR ABOVE EL. 413.5'
4" SPRING. RISER FOR CONN.
4" WATER METER CONN.
UNDER SIDE OF ROOF
ABOVE SHED
FIRE WALL
1 HR. FIRE WALL
1 HR. FIRE DOOR
1 HR. FIRE DOOR & FRAME
1 HR. FIRE DOOR & FRAME W/ SPRINKLER
1 HR. FIRE DOOR & FRAME W/ SPRINKLER & WINDOW
1 HR. FIRE DOOR & FRAME W/ WINDOW
1 HR. FIRE DOOR & FRAME W/ WINDOW & SPRINKLER

PROPERTY LINE



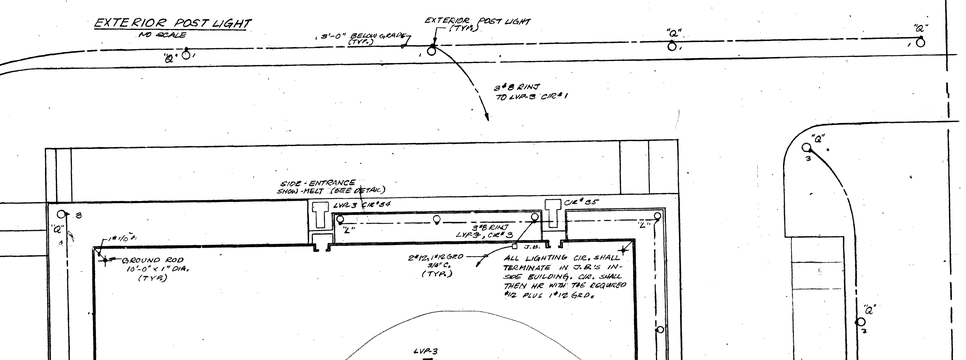
TYPICAL CONDUIT ENTRANCE
NO SCALE

NOTES
1. ALL CONDUITS ENTRANCES SHALL ENTER BELOW GRADE BEAM AS SHOWN (REFER TO DWG. C-3).
2. ALL CONDUITS SHALL BLOW UP WITH RANII RECOMMENDED BY N.E.C.
3. ALL LIGHTING CIRCUITS RUNNING UNDER TRAFFIC AREAS SHALL RUN IN 1"C. TERMINATING 1'-0" BEYOND BOTH EDGES OF DRIVEWAY.

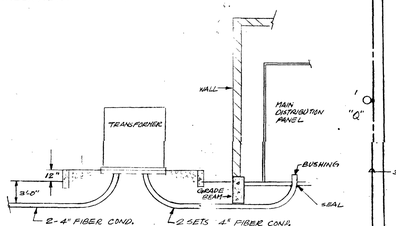


NOTES
1. LAMPS SHALL BE MOUNTED AS SHOWN.
2. CONCRETE BASE SHALL BE A MINIMUM OF 3'-0" IN DEPTH.

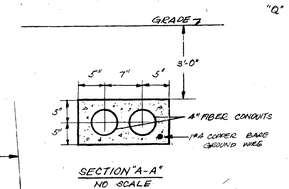
EXTERIOR POST LIGHT
NO SCALE



NOTES ON ELEC. SERVICE
1. CONTRACTOR SHALL REFER TO NIAGARA MOHAWK'S SPECIFICATION FOR ELECTRICAL INSTALLATIONS WHICH IS AVAILABLE AT THE COMPANY.
2. SPECIFIC REFERENCES SHALL BE MADE TO DWG'S # 16.3-1-65, 16.3-1-65.1, & 16.3-1-58.1 FOR TRANSFORMER INSTALLATION) AND DWG'S 16.3-1-5 & 16.3-1-6 FOR HANDHOLE INSTALLATION.
3. ELBOWS & RISERS SHALL BE GALVANIZED STEEL - SEE ARTICLE 4 OF PAD MOUNTED TRANSFORMER SUPPLEMENT TO SPECIFICATIONS FOR ELECTRICAL INSTALLATION.

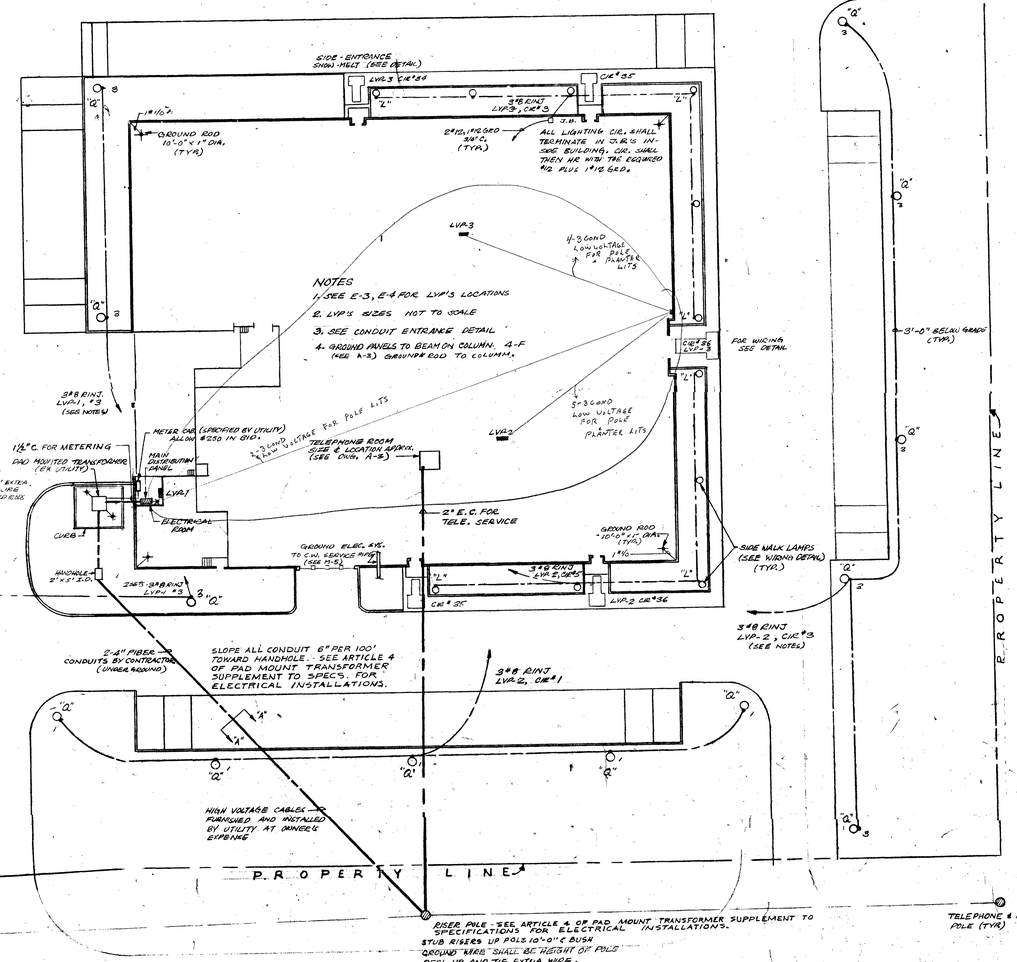


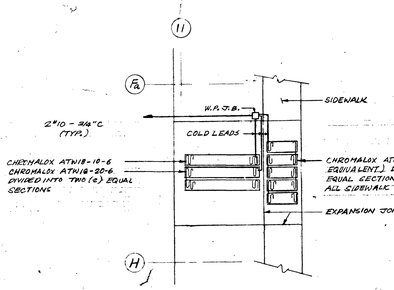
PAD MOUNTED TRANSFORMER - ELEVATION
DETAIL - NO SCALE



SECTION "A-A"
NO SCALE

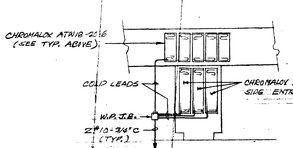
EASEMENT LINE



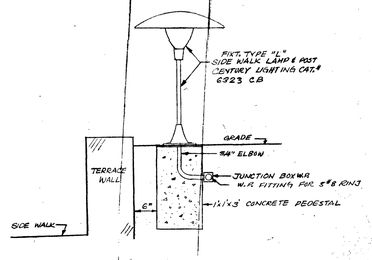


FRONT ENTRANCE SNOW MELTING
SCALE: 1/8" = 1'-0"

NOTES FOR SNOW-MELTING WIRING
1. SNOW-MELTING WIRE SHALL BE CHROMALOX ATW HEATH MATS OR NELSON EQUIVALENT. IF CHROMALOX IS USED MATS SHALL BE ATW 18-6-6, ATW 18-10-6, AND ATW 18-20-6 AS SHOWN.
2. ALL SECTIONING AND INSTALLATION OF MATS SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. ALL JUNCTION BOXES SHALL BE PLACED 6" UNDER SOD AND NO LESS THAN 6" AWAY FROM EDGE OF CONCRETE.
4. ALL COLD LEADS SHALL BE IN 3/4" C.



TYPICAL SIDE ENTRANCE SNOW MELTING
SCALE: 1/8" = 1'-0"



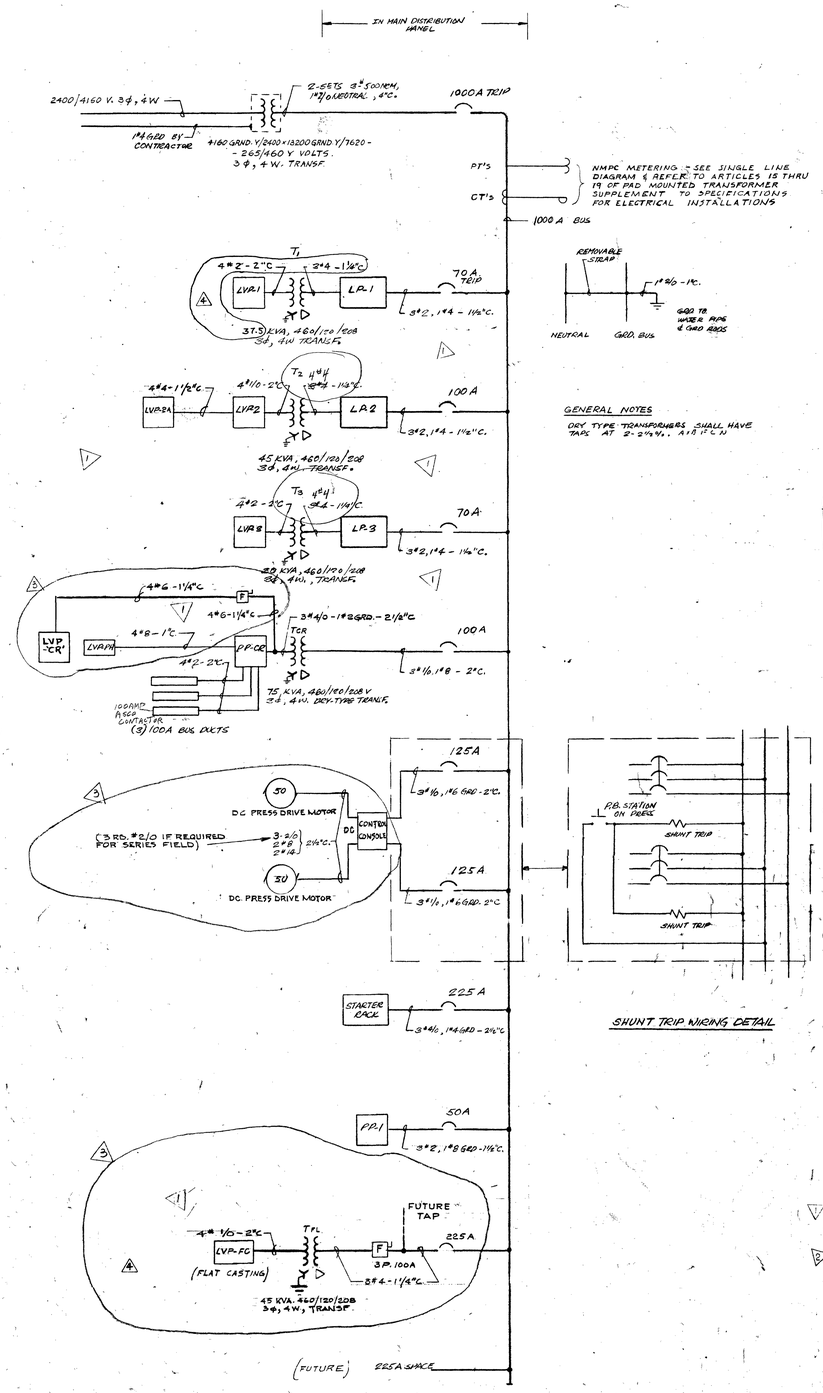
SIDEWALK LAMP MOUNTING DETAIL
NO SCALE

NOTES
1. LAMPS SHALL BE MOUNTED AS SHOWN

RECEIVED
MAY 12 1967
McNAMUS, LOWE, BROCKWELL INC.

EVENING RECORDER			
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.			
ELECTRICAL PLOT PLAN			
LOCKWOOD GREENE ENGINEERS, INC. 200 PARK AVE. NEW YORK 17, N.Y.			
MADE BY	DATE 4-4-66	JOB NO. 65109	DWG. NO. E-1
CHECKED BY	DATE 4-15-66		
APPROVED	DATE 4-12-66		
SCALE 1" = 20'-0"	DATE APRIL 4, 1966		

No.	DATE	REVISION	BY	CHK	APPR.



SHUNT TRIP WIRING DETAIL

MAIN DISTRIBUTION PANEL

3φ, 4W, 460 V., PA FRAME MAIN BREAKER, 1000 A TRIP, GRD & NEUT BUS

LOAD DESCRIPTION	KVA	HP	CIR. BREAKER FR.	TRIP	POLE	REMARKS
LP-1		-	E	70	3	
LP-2		-	F	100		
LP-3		-		70		
PP-CR (T-CR)	70	-		100		
PRESS MOTOR #1	-	50		125		
PRESS MOTOR #2	-	50				
STARTER RACK	160	-	↓	225	↓	
PP-1	25	-	E	50		
TRANSF. FLAT CASTING	45		F	225		
SPACE			F	-		

LIGHTING PANEL SCHEDULES

265/460 V, 3φ, 4W. MAINS; 265 V. 20 A BRANCHES

PANEL Nº	Nº OF CIRCUITS ACT.	SPARE	TOTAL	LOAD KVA	LUG	MOUNT	REMARKS
LP-1	8	5	13		TOP	SURF.	CKTS SHALL BE 3P (50A TRIP)
LP-2	11	2	13		BOT	FLUSH	" " " (100A TRIP)
LP-3	10	3	13		BOT	FLUSH	" " " (50A TRIP)

LOW VOLTAGE PANEL SCHEDULES

120/208 V, 3 PHASE, 4 W. MAINS; 20A BRANCHES

PANEL Nº	Nº OF CIRCUITS ACT.	SPARE	TOTAL	LOAD KVA	LUG	MOUNT	REMARKS
LVP-1			30		TOP	SURF.	G-2P CIRCS., 3-3P CIRCS., 1-2P 50A CIRC.
LVP-2			36		BOT	FLUSH	CIR. #1 TO 36 SHALL BE 2 PHASE
LVP-3			36		BOT	FLUSH	CIR. #1 TO 36 SHALL BE 2 PHASE
LVP-2A			18				CIR. #2-2P, CIR. #18 & 16-2P, 30A.
LVP-CR	-	24	24				

POWER PANEL PP-1 SCHEDULE

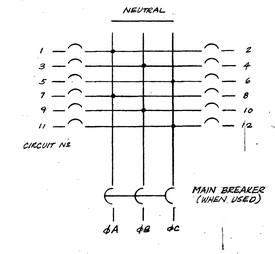
460V, 3φ, 3W (SEE DWG. E-6)

CIR. Nº	LOAD DESCRIPTION	HP or KVA	CIR. BREAKER FR.	TRIP	POLE	REMARKS
1	HV-3	2	EA	15	3	
2	EHV-3	3/4				2-SPEED STARTER BY ELEC. CONT.
3	HV-4	2				
4	EHV-4A	1½				
5	DUPLEX PUMPS	2-1½				
6	AIR COMPRESSOR	1½				
7	BOILER PUMP	5				
8	EHV-5, EHV-2B	3/4, 1½				
9	EHV-7, EHV-2A	1½+½				2-SP STARTER BY ELECT. CONT. (EHV-7)
10	(2) HOISTS ON PRESS	1				SEE DWG E-6.
11	SPARE	-				
12	EHV-1A & 1B	2				
13	CONVEYOR MOT.	5				
14	POWER RECT.		EA	30	3	

FLAT CASTING PANEL LVP-FC

3 PHASE, 4 W. 120/208 V.

ITEM	LOAD DESCRIPTION	KVA or HP	CIR. BREAKER FR	TRIP	POLE	REMARKS
1	SHAVER	9½	F	70	3	208 V. CIR., 3φ
2	SCORCHER	5	F	40	3	208 V. CIR., 3φ
3	REWINDER/HOIST	8½	F	60	3	208 V. CIR., 3φ
4	TABLE SAW	3/4	E	20	1	
5	FINISHER	1/3	E	20	1	
6	HOIST, REMELT	1/2	E	20	1	
7	AUTO MIXER	—	E	20	1	
8	REC. ON PRESS	—	E	20	1	
9	SPARE		E	20	3	
10			E	20	3	
11			E	60	3	
12			E	20	1	
13			E	60	1	
14			E	20	1	



TYPICAL CONNECTION FOR 3φ MAIN, 1φ BRANCH CIRCUITS

NOTE
CONTRACTOR SHALL BALANCE LOADS

COMPOSING ROOM POWER PANEL "CR"

120/208 V, 3φ, 4W

CIR. Nº	LOAD DESCRIPTION	KVA	CIR. BREAKER FR.	TRIP	POLE	REMARKS
1	BUS DUCT		FA	100	3	
2	"		↓	↓	↓	
3	"					
4	LVP-PH		FA	50	3	

PHOTO LAB POWER PANEL "PH"

120/208 V, 3φ, 4 WIRE

ITEM Nº	LOAD DESCRIPTION	KVA	CIR. BREAKER FR.	TRIP	POLE	REMARKS
101	BROWN CAB	—	—	—	—	
102	NU-ARC	.55	EA	15	1	
103	TABLE	.55				
104	DRYER	1.10				
105	GRAFCO SINK	1.65	↓	↓	↓	
106	BROWN CAMERA	3.30	↓	20	2	208 V. CIR., 1φ
107	CAB	—	—	—	—	
108	TABLE	—	—	—	—	
109	NUARC TABLE	.55	EA	15	1	
110	NUARC TABLE	.55	↓	15	1	
111	TABLE	—	—	—	—	
112	CAB.	—	—	—	—	
113	BROWN PRANE	3.30	EA	20	2	208 V. CIR., 1φ
114	SINK	—	—	—	—	

NOTE
UNLESS OTHERWISE NOTED ALL CIR. ARE 120 V., 1φ

GENERAL NOTES

DRY TYPE TRANSFORMERS SHALL HAVE TAPS AT 2-2½%. A 15 KV.

SYMBOL LIST

- 72"x96" INDUSTRIAL FL. FIXT. WITH 2-96" POWER-GROOVE LAMPS
- 24"x48" FL. FIXT. WITH 4-40 WATT LAMPS
- 12"x48" FL. FIXT. WITH 2-40 WATT LAMPS
- 24"x 24" FL. FIXT. WITH 4-20 WATT LAMPS
- 12"x 24" FL. FIXT. WITH 2-20 WATT LAMPS
- 150 W INCANDESCENT LAMP SOCKET WITH LAMP SHADE
- 150 W CHANDELIER
- OUTDOOR POST LAMP
- EXIT LIGHT
- EMERGENCY LIGHTS
- 100A., 4 WIRE BUS DUCT
- 120 V., 1φ, DUPLEX RECEPTACLE
- 240V., 3φ, 4 WIRE RECEPTACLE, H&H. CAT.# 7410-G, PLUG #7411
- CLOCK RECEPTACLE, HARVEY-HUBBELL CAT.# 7707
- TELEPHONE RECEPTACLE OR OUTLET
- 120 V., 1φ, PLUG-MOLD
- 2#12 - 3/4"C. UNLESS OTHERWISE SPECIFIED EXPOSED OR IN HUNG CEILING.
- 2 #12 - 3/4"C. UNDER SLAB.
- UNDERFLOOR DUCT - SOLID FOR 110 V., DASHED LINE FOR TELE.
- POWER OR DISTRIBUTION PANEL
- STARTER RACK
- LIGHTING PANEL - 277 V.
- LOW VOLTAGE PANEL
- TELEPHONE PANEL
- TRANSFORMER
- MOTOR
- UNIT HEATER
- FAN COIL UNIT
- AQUASTAT
- THERMOSTAT
- RESISTANCE HEATER
- FUSE
- DISCONNECT; F FOR FUSED
- 1φ STARTER
- 3φ STARTER
- COMBINATION STARTER - MAGNETIC TYPE
- S — SINGLE POLE SWITCH
- S_3 — THREE WAY SWITCH
- S_{DP} — DOOR SWITCH, PASS & SEYMOUR CAT.# 1200; FURNISH TEMPLATE TO GENERAL CONTRACTOR TO CUT OUT BUCK
- GROUND ROD
- W.P. — WEATHERPROOF
- H.R. — HOME RUN
- J.B. — JUNCTION BOX
- P.B. — PUSH BUTTON

RECEIVED
MAY 12 1967
ARCHIVES, 19065, BROADWELL HALL

ORIGINAL FILE STAMPED RECORD STEPHEN L. HUTCHINS No 3441 STATE OF NEW YORK

No	DATE	REVISION	BY	CHK	APPR.
4	10-21-66	ACCORDING TO ADDENDUM #10	M.L.	J.A.B.	
3	10-19-66	ACCORDING TO ADDENDUM #10	W.J.	J.A.B.	
2	10/7/66	ACCORDING TO ADD. 7 & 8.	W.J.	J.A.B.	
1	9-30-66	ACCORDING TO ADD. 7 & 8	W.J.	J.A.B.	

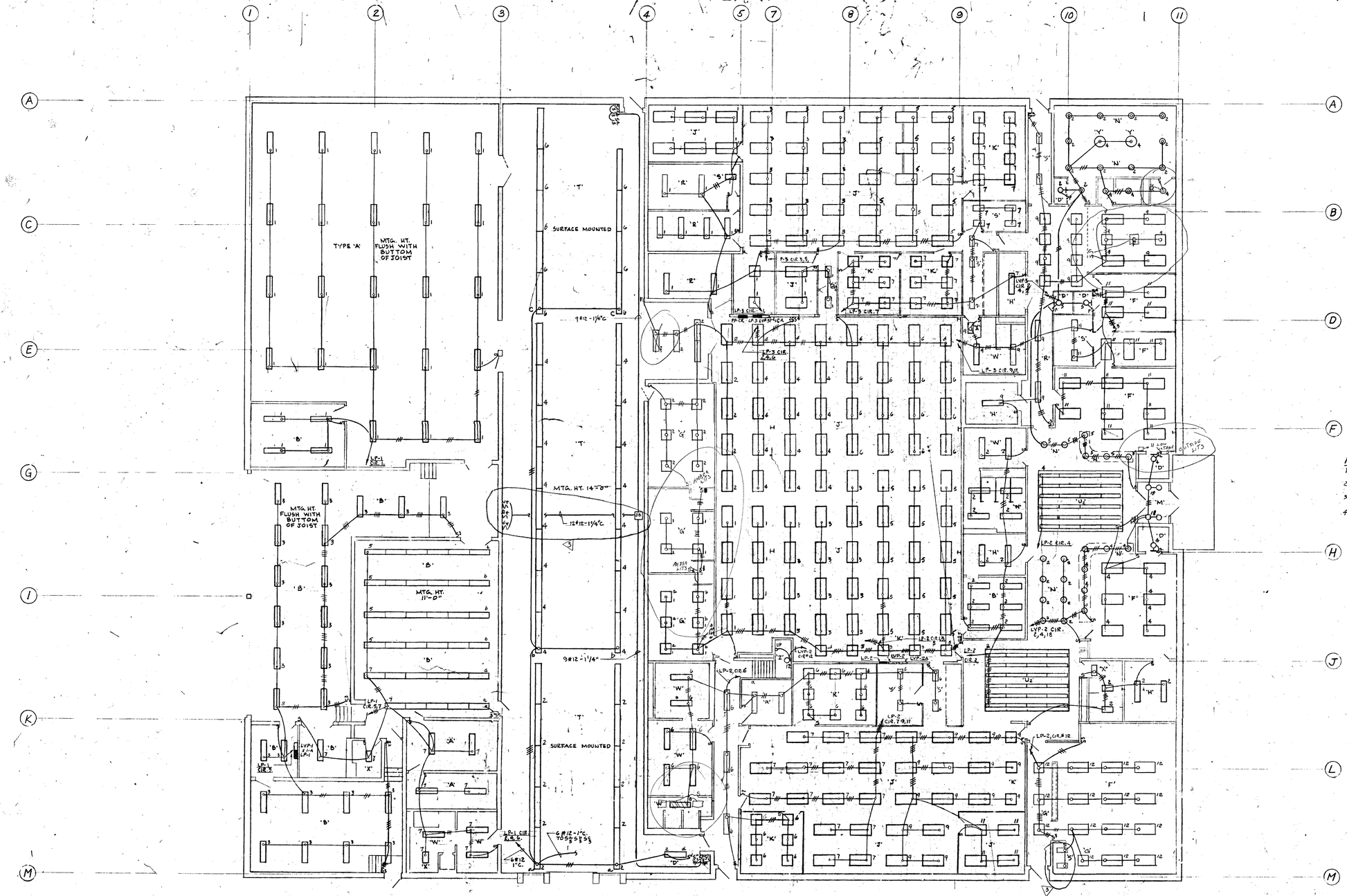
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

ONE-LINE DIAGRAMS AND SCHEDULE

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	DATE	CHECKED BY	DATE	APPROVED	DATE	SCALE	DATE
		JAB	4/15/66		4/15/66	NONE	

JOB NO. 65109 DWG. NO. E-



NOTES:
1. SEE DWG. A-11 (REFLECTED CEILING PLAN) FOR INSTALLATION OF RECESSED FIXTURES.
2. ALL FIXTURES SHALL BE SUITABLE FOR TYPE OF CEILING IN WHICH THEY ARE INSTALLED.
3. IN HUNG CEILINGS EMT AND/OR FLEXIBLE METALLIC CONDUIT MAY BE USED.
4. SEE E-2 FOR FEEDER WIRING OF PANELS.

NOTE:
GENERALLY REVISED

RECEIVED
MAY 12 1967
OSBORNE ENGINEERING CORP.

REGISTERED ARCHITECT
STEPHEN L. MCINTOSH
No. 3401
STATE OF NEW YORK

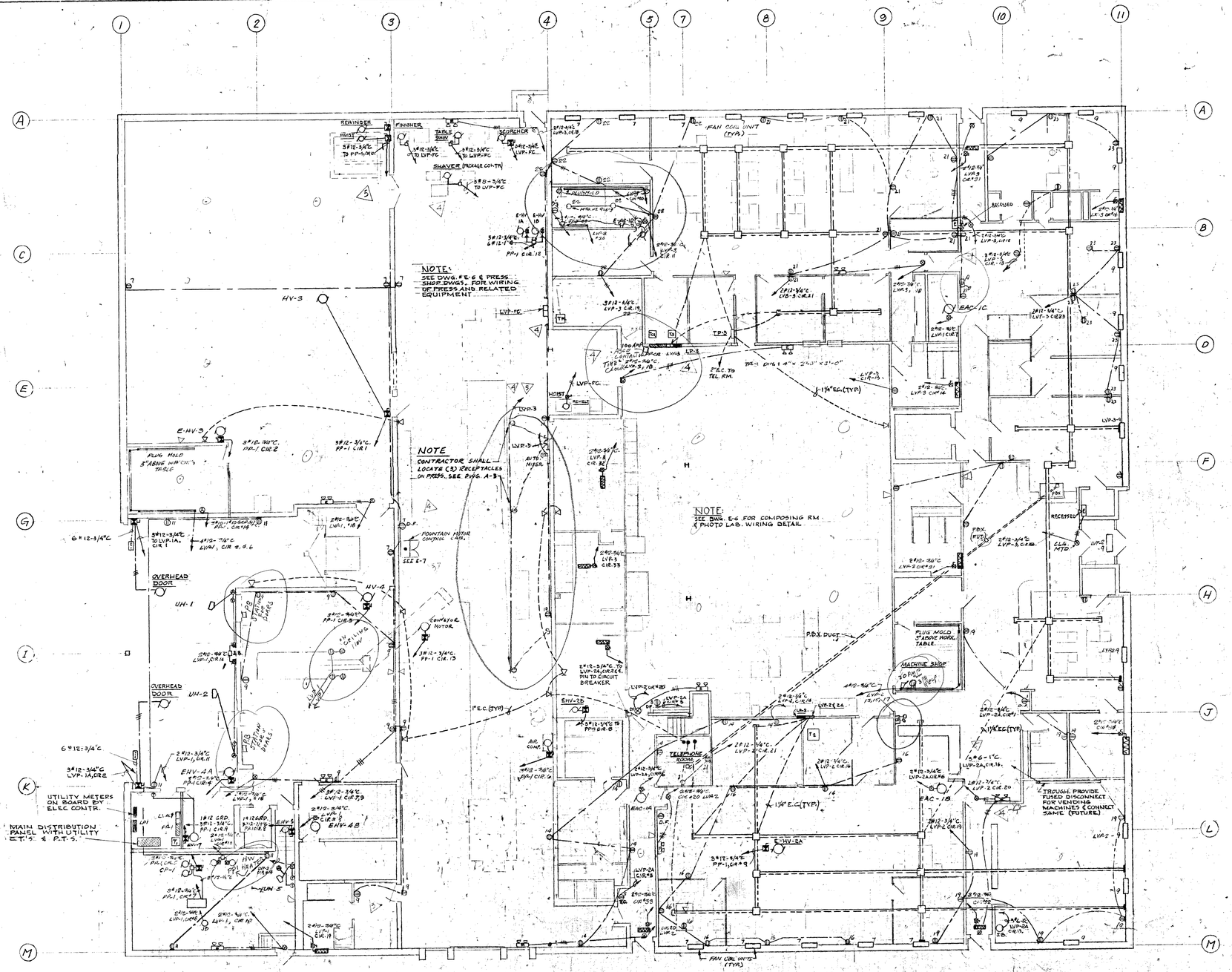
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3	10-19-66	ACCORDING TO ADDENDUM #10	W.J.	JAB	
2	10-4-66	ACCORDING TO ADD. 7 & 8	W.J.	JAB	
1	9-30-66	ACCORDING TO ADD. 7 & 8	W.J.	JAB	

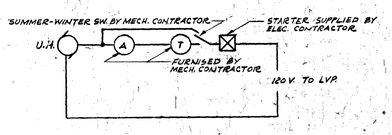
EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

FIRST FLOOR PLAN - LIGHTING

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

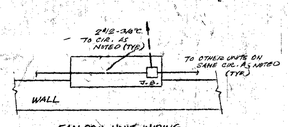
	NAME	DATE	JOB NO.	DWG. NO.
MADE BY	RH HAGER	4/8/66	65109	E-3
CHECKED BY	JAB	4/11/66		
APPROVED	SLM	4/12/66		
SCALE	1/8" = 1'-0"		DATE	APRIL 4, 1966





UNIT HEATER WIRING (TYPICAL)

NOTE
EXHAUST FAN WIRING SIMILAR WITHOUT AQUASTAT (BY ELEC. CONTRACTOR)



FAN COIL UNIT WIRING NO SCALE

NOTE
SEE DWG. M-1 FOR EXACT FAN COIL UNIT LOCATIONS. SEE DWG. M-1, M-2, M-3 FOR DETAIL ON MECHANICAL WORK.

NOTES

ON TELEPHONE RECEPTACLES (OUTLETS)
1. LOCATIONS OF TELE. RECPT. SHOWN ARE ARBITRARY. EXACT POSITIONS SHALL BE DETERMINED BY OWNER AND TELEPHONE CO.
2. ONE TELE. RECPT. SHALL BE PROVIDED FOR EACH DESK SHOWN ON UNDERFLOOR DUCT.
3. TELE. RECPTS. THAT ARE NOT ABOVE DUCTS SHALL BE PROVIDED WITH 3/4" E.C. RUN TO NEAREST TELE. PANEL, DUCT OR DIRECT TO TELEPHONE ROOM. ESTIMATE OF CONDUIT RUNS REQUIRED SHALL BE BASED ON LOCATIONS SHOWN.

ON EMERGENCY LIGHTING UNITS
1. ALL EMERGENCY LIGHTING UNITS SHALL BE MOUNTED NOT LESS THAN 7'-0" FROM FIN. FL. TO BOTTOM OF UNITS.
2. ALL UNITS IN OFFICE AREAS SHALL BE OF THE RECESSED TYPE. ALL OTHER UNITS MAY BE SURFACE MOUNTED.
3. LOCATION OF UNITS MAY BE ADJUSTED IN FIELD SO AS TO GIVE OPTIMUM ILLUMINATION.
4. ANY EMERGENCY LIGHTING UNIT & COMPANION EXIT LIGHT SHALL BE ON SAME 120 V. CIRCUIT & 2 WIRES SHALL BE RUN TO EXIT LIGHT FOR 175 V. D.C. LAMP.

ON ROOF FANS
1. ALL ROOF FANS SHALL HAVE A DISCONNECT SWITCH

ON FEEDERS
1. SEE DWG. E-2 FOR FEEDER TO PANEL WIRING.

GENERALLY REVISED TO AS IS CONDITIONS

RECEIVED
MAY 12 1967
MARKS, LOVE, BRAKEWELL INC.

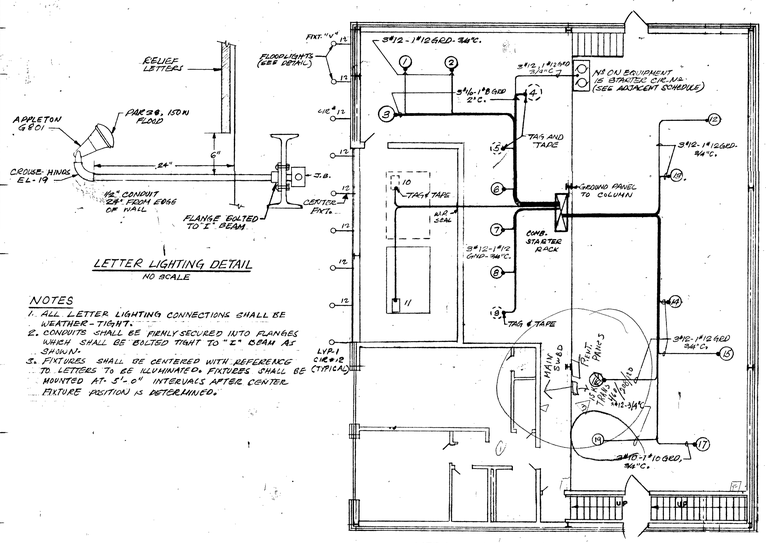
NO	DATE	REVISION	BY	CHK	APPR.
6	10-19-66	ACCORDING TO ADDENDUM #10	W.J.	JAD	
5	10/7/66	ACCORDING TO ADD. #7 & 8	W.J.	JAD	
4	9/30/66	ACCORDING TO ADD. 7 & 8	W.J.	JAD	
3	—	?	—	—	—
2	—	REVISION ACCORDING TO OWNER'S LAYOUT CHANGES	—	—	—
1	5/-/66	ACCORDING TO ADDENDUM #4	—	—	—

EVENING RECORDER
W.J. KLINE & SON INC., PUB. AMSTERDAM, N.Y.

FIRST FLOOR PLAN - POWER

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	DATE	JOB NO.	DWG. NO.
CHECKED BY	4/4/66	65109	E-4
APPROVED	4/12/66		
SCALE 1/8" = 1'-0"	DATE APRIL 4, 1966		



LETTER LIGHTING DETAIL
NO SCALE

NOTES
1. ALL LETTER LIGHTING CONNECTIONS SHALL BE WEATHER-TIGHT.
2. CONDUITS SHALL BE FIRMLY SECURED INTO FLANGES WHICH SHALL BE BOLTED TIGHT TO "I" BEAM AS SHOWN.
3. FIXTURES SHALL BE CENTERED WITH REFERENCE TO LETTERS TO BE ILLUMINATED. FIXTURES SHALL BE MOUNTED AT 5'-0" INTERVALS AFTER CENTER FIXTURE POSITION IS DETERMINED.

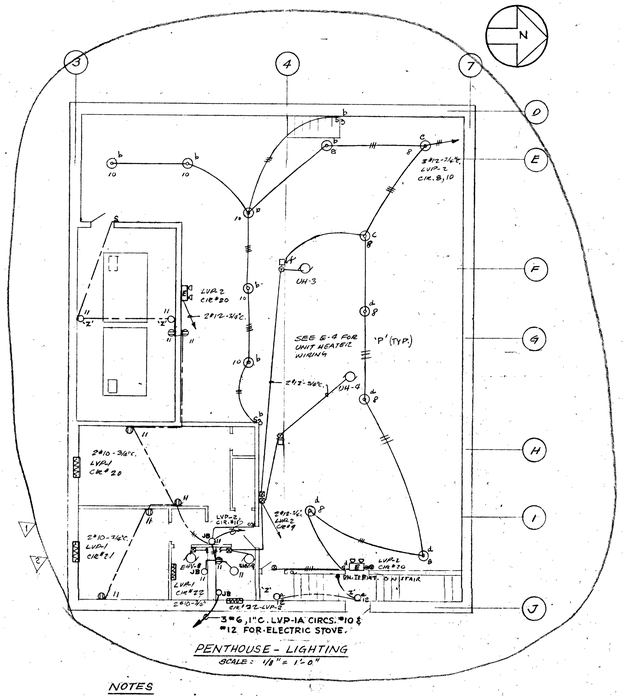
MECHANICAL EQUIPMENT ROOM STARTER SCHEDULE
480 V., 3ø, 3W

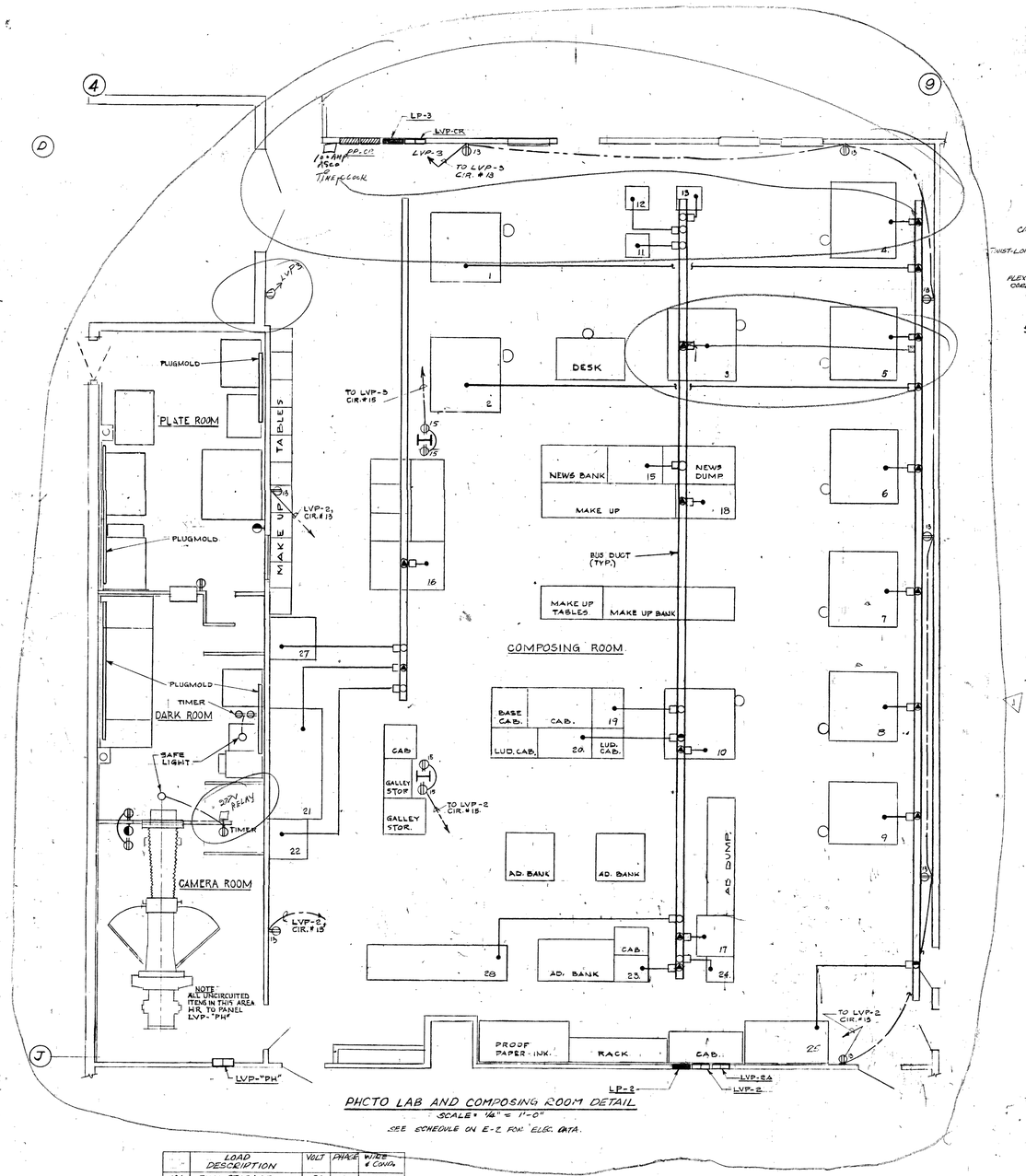
CIR. NO.	LOAD DESCRIPTION	KVA OR HP	STARTER SIZE	STARTER CONTROL	AUX. CONTACT	REMARKS
1	HOT WATER PUMP P-4	3	2	H-O-A	NO	
2	" P-5	3		H-O-A	NO	
3	REFRIGERATION MACHINE	70.0		—	—	BY MECH. CONT.
4	"	70.0		—	—	(FUTURE)
5	CHILLED WATER PUMP	10		—	—	(FUTURE)
6	"	10				
7	STANDBY PUMP	10		H-O-A	NO	
8	CONDENSER WATER PUMP	10		H-O-A	NO	
9	"	10		—	—	(FUTURE)
10	COOLING TOWER	10		—	—	(FUTURE)
11	"	10		H-O-A	NO	
12	RAC-1	3				
13	AC-1	10				
14	HV-2	10				
15	RHV-2	5				
16	RHV-1	10				
17	HV-1	15				
18	COMPRESSOR	(2) 3/4				
19	E-HV-G	3/4	↓	↓	↓	

STARTERS BY ELECTRICAL CONTRACTOR EXCEPT AS NOTED

MECHANICAL EQUIPMEMT ROOM - PLAN
SCALE: 1/8" = 1'-0"

NOTES
1. ALL CONDUITS SHALL BE RACKED HIGH AS POSSIBLE WITH UNISTRUT, KINDORF, GLOBE-STRUT OR EQUIVALENT. ALL RUNS SHALL AVOID MECHANICAL INSTALLATIONS (HVAC & SPRINKLER INCLUSIVE) AND TERMINATE IN JUNCTION BOXES.
2. ALL WIRING FOR MOTORS SHALL BE 2#12 - 1"ø GRD UNLESS OTHERWISE SPECIFIED. WIRE RUNS TO FUTURE EQUIPMENT SHALL BE TAGGED AND TAPED, TERMINATED IN J.B.'S AND BE OF SUFFICIENT LENGTH FOR FUTURE CONNECTIONS WITHOUT ADDITIONAL WIRES.
3. STARTER RACK SHALL BE MOUNTED ON UNISTRUT OR EQUIVALENT AND BE GROUNDED. CONTROLS SHALL FACE COOLING TOWER.
4. FOR MECHANICAL EQUIPMENT LAYOUT REFER TO DWGS. M-2, M-3
5. REFER TO DWG M-2 FOR LOCATION OF MECH EQUIP.
6. SEE E-2 FOR TRUNK TO PANEL WIRING.



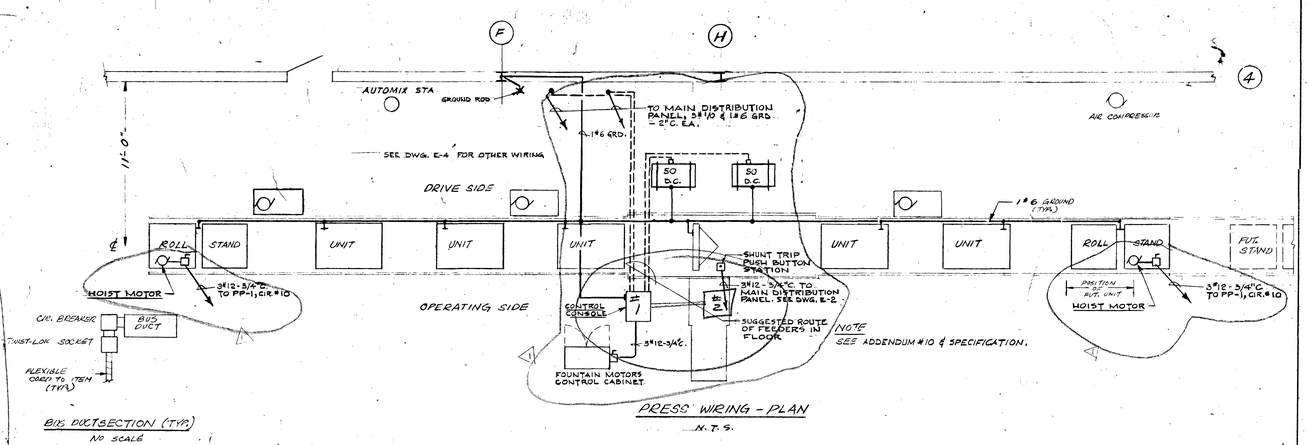


PHCTO LAB AND COMPOSING ROOM DETAIL

SCALE: 1/8" = 1'-0"

SEE SCHEDULE ON E-2 FOR ELEC. DATA.

	LOAD DESCRIPTION	VOLT	PHASE	WIRE & CONDA
101	FILM STORAGE	120	1	2#12-3/4"C
102	NUARC VAC. FR.	120		
103	GRAFCO ETCHING TAB.			
104	FILM DRYER			
105	GRAFCO SINK			
106	BROWN CAMERA	208		2#13-3/4"C
107	CABINET	—		
108	TABLE	—		
109	NUARC LIGHT TABLE	120	1	2#12-3/4"C
110	NUARC LIGHT TABLE	120	1	2#12-3/4"C
111	TABLE	—		
112	CABINET	—		
113	BROWN EXP. FRAME	208	1	2#10-3/4"C
114	BROWN SINK	—		
115				
116				



NOTE
SEE ADDENDUM #10 & SPECIFICATION.

BUS DUCT SECTION (TYP.)
NO SCALE

PRESS WIRING - PLAN
N.T.S.

COMPOSING ROOM POWER SCHEDULE

120/208 V. 3Φ BUS DUCT WITH NEUTRAL & GRD.

UNIT No.	LOAD DESCRIPTION	VOLT	PHASE	KVA or HP	HEATER IN KVA	WIRE	CIRCUIT BREAKER FR.	TRIP	POLE	REMARKS
1	HEADLETTER	208	3	4.0	2.42	4#10	EA	40	3	HEATER ON Φ A & B
2	LEADS			2.3	1.76			30		" B & C
3	V-TAPE			2.8	1.87			30		" B & C
4	C-TAPE			3.4	2.42			40		" A & B
5	V-TAPE			3.4				40		" B & C
6	C-TAPE			2.8				40		" A & C
7	G-4 CLASSIFIED			2.8	1.87	5#10		30		" A & B
8	G-4 ADD			2.6				30		" B & C
9	G-4-4 ADD			2.6				30		" A & C
10	G-4 ADD			3.6	2.42	4#10		40		" A & C
11	PERFORATOR	110	1	1/2	-	3#12		15	1	
12	"				-					
13	"				-					
14	MOTOR	110	1	1/40	-					
15	PROOF PRESS	110	1	1/2	-					
16	GLIDER SAW	208	3	1	-	4#12			3	
17	SAW	208	3	1	-					
18	BAND SAW	208	3	1/3	-					
19	ROUTER	110	1	1/4	-	3#12			1	
20	LUDLOW	208	1	4.8	-	3#10		30	2	
21	REPRO PROOF PRESS	208	3	5.0	-	4#10		40	3	
22	DRYER	110	1		-	3#12		15	1	
23	MITRE	208	3	1/4	-	4#12			3	
24	SAW	110	1	1/4	-	3#12			1	
25	ELROD	208	1	3.5	-	3#10		30	2	
26		110	1	-	-	-	-	-	-	
27	BAND SAW	110	1	1/2	-	3#12	EA	15	1	
28	PASTE-UP BANK	110	1		-		EA	15	1	

NOTE
ALL HEATERS LISTED ABOVE OPERATE ON 208 V. SINGLE PHASE; CONTRACTOR SHALL BALANCE HEATER LOADS IN LINE-CASTING MACHINES AS SHOWN.

NOTES
1. THE FOLLOWING SYMBOLS ARE USED TO DESIGNATE THE ELECTRICAL RECEPTACLES ON THIS DRAWING: ◐ 208 V., 3ϕ, 20A ◑ 208 V., 1ϕ, 20A ○ 120 V., 1ϕ, 15A.
2. CONTRACTOR HAS CONSIDER EACH ITEM TO BE A "PACKAGE" INCLUDING DE-CONNECTS AND HE SHALL ONLY CONNECT BETWEEN ITEMS AND PLUG WITH "SO" NEOPRENE CORD WITH GROUND WIRE.
3. LOCATION OF RECEPTACLES ARE ARBITRARY. CONTRACTOR SHALL CHECK EXISTING ITEMS TO BE MOVED TO THE SITE AND SHOP DRAWS. OF NEW ITEMS AS TO THE BEST LOCATION OF POWER AVAILABLE.
4. CORD FROM ANY MACHINE SHALL BE PROTECTED TO A HGT. OF 7'-0" FROM F.F.L. WITH 3/4" C. BUSHED BOTH ENDS.

SECTION "A-A" - PRESS
SCALE: 1/4"=1'-0"

RECEIVED
MAY 12 1967
MECHANICAL ENGINEERING DEPARTMENT

REGISTERED ARCHITECT STEPHEN L. HEDRICH NO. 3441 STATE OF NEW YORK

No	DATE	REVISION	BY	CHK	APPR.
1	10-19-66	ACCORDING TO ADDENDUM #10	W.J.	D.A.B.	

EVENING RECORDER
W.J. KLINE & SON INC. PUB. AMSTERDAM, N.Y.

MECHANICAL AREA - DETAIL

LOCKWOOD GREENE ENGINEERS, INC.
200 PARK AVE. NEW YORK 17, N.Y.

MADE BY	RJH	4/25/66	JOB NO. 65109
CHECKED BY	JAS	4/15/66	DWG. NO. E-6
APPROVED	WJK	4/26/66	
SCALE 1/4" = 1'-0"			DATE APRIL 4, 1966

DOCUMENT 003126 - EXISTING HAZARDOUS MATERIAL INFORMATION

1.1 EXISTING HAZARDOUS MATERIAL INFORMATION

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
   1. An Asbestos Sampling & Laboratory Analysis report for the Project, prepared by C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C., dated October, 2020, is available for viewing as appended to this Document.
   2. Bidders may examine any available existing conditions information by giving Owner reasonable advance notice.

B. Hazardous Materials: Present in building and work to be selectively demolished.
   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

C. Related Requirements:
   1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
   2. Document 003119 "Existing Condition Information" for information about existing conditions that is made available to bidders.

END OF DOCUMENT 003126

EXCEPT FOR ABOVE REFERENCED ITEMS WHICH FOLLOW

003126.1 - ACM Sampling & Laboratory Analysis

October 2020

Asbestos Containing Material Survey

1 Venner Road
City of Amsterdam
Montgomery County, New York

Prepared for:

Mr. Eric Mead
Montgomery County Public Works Commissioner
6 Park Street
P.O. Box 1500
Fonda, NY 12068-1500

Prepared by:

C.T. MALE ASSOCIATES
50 Century Hill Drive
Latham, New York 12110
518-786-7400
FAX 518-786-7299

C.T. Male Project No: 20.0649

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C.T. MALE ASSOCIATES ENGINEERING, SURVEYING, ARCHITECTURE, LANDSCAPE ARCHITECTURE, & GEOLOGY D.P.C.

ASBESTOS CONTAINING MATERIAL SURVEY

1 Venner Road
Amsterdam, NY

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APPENDICES

APPENDIX A C.T. MALE ASSOCIATES CERTIFICATIONS

APPENDIX B LABORATORY CERTIFICATIONS

APPENDIX C ACM ANALYSIS RESULTS & CHAIN OF CUSTODY

APPENDIX D BUILDING PLAN

APPENDIX E ACM SURVEY ABATEMENT COST ESTIMATES

1.0 INTRODUCTION

This report presents the findings of an asbestos containing material (ACM) survey of the former Amsterdam Recorder building located at 1 Venner Road in Amsterdam, New York. The building is a two-story brick structure constructed on a slab-on-grade foundation with flat roofs.

The purpose of this report was to determine whether there are asbestos containing materials in the structure prior to renovation activities. The survey included identification of suspect asbestos containing materials, quantification, and bulk sampling of suspect asbestos containing materials. Laboratory analysis was performed to determine the presence and type of asbestos in sampled materials. Any material is considered asbestos containing if it contains one percent, or more, asbestos by weight.

What is known as "destructive" inspection and sampling techniques may have been used when necessary. Destructive techniques are used, where appropriate, to look behind walls, above ceilings, and under floors to access any piping, sub-structures or miscellaneous materials that may exist.

C.T. Male Associates (C.T. Male) personnel conducted this ACM survey. C.T. Male possesses EPA accreditation and asbestos certification, as required by the New York State Department of Labor, as Inspectors for asbestos.

2.0 SITE VISIT - ASBESTOS CONTAINING MATERIALS

C.T. Male personnel visited the site on September 30, 2020.

A walk through of the subject areas was conducted during which suspect asbestos containing materials were identified. Three major categories of suspect materials are categorized during asbestos inspections: Surfacing Materials, Thermal System Insulation (TSI) and Miscellaneous Materials. These categories are described below:

> **Surfacing Material** - Materials that are sprayed-on, trowelled-on or otherwise applied to surfaces. Examples include acoustical plaster on ceilings and/or walls, fireproofing materials on structural members, or decorative applications.
>
> **Thermal System Insulation** - Materials, usually found on piping, fittings, boilers, tanks, ducts or other mechanical components to prevent heat loss or gain.
>
> **Miscellaneous ACM** - Any other materials including, but not limited to, floor and ceiling tiles, gaskets, felts, paper products, etc. that are neither surfacing materials nor thermal system insulation.

During the course of the site visit, suspect materials of similar type, texture and appearance are grouped together and considered homogeneous. Each homogeneous material is quantified and, depending on overall quantity as well as the locations of the material throughout the site, an appropriate number of bulk samples were secured.

Suspect Materials Located

Plasters	Drywall
Taping Compound	1’x1’ Ceiling Tile
1’x2’ Ceiling Tile	2’x2’ Ceiling Tile
2’x4’ Ceiling Tile	Wall Panel Adhesive
Ceramic Floor Tile Set	Ceramic Floor Tile Grout
Ceramic Wall Tile Adhesive	Ceramic Wall Tile Grout
Floor Tile Mastic	9”x9” Floor Tile
Floor Tile Adhesive	12”x12” Floor Tile
12”x12” Floor Tile (thin)	Self-Adhesive Floor Tile
1’x2’ Self-Adhesive Floor Tile	Faux Wood Flooring
Carpet Adhesive	Cove Base Adhesive
4” Cove Base	Fire Door Insulation
Fitting Insulation	Duct Insulation

Suspect Materials Located (continued)

Boiler Breeching Insulation
Duct Vibration Joint Cloth
Door Window Glazing Compound
Window Caulk
Tank Insulation
Window Glazing Compound
Door Caulk

3.0 SAMPLING AND LABORATORY ANALYSIS

C.T. Male's representative collected eighty (80) bulk samples during the site-visit. The samples were analyzed using Polarized Light Microscopy (PLM). Non-friable organically bound materials were analyzed using the Matrix Reduction Method in conjunction with PLM based on the New York State Department of Health Environmental Laboratory Approval Program recommendations. Any negative sample analysis results by this method are then analyzed further by Transmission Electron Microscopy (TEM). Non-friable organically bound materials are bound by cements or adhesives. Examples include floor tile, floor tile mastic and sheet floor covering. AmeriSci New York of New York, NY performed analysis of the bulk samples by PLM or TEM. Table 3.0 provides a summary of analysis results.

TABLE 3.0
BULK SAMPLE ANALYSIS RESULTS

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP01 1st Floor Lobby Closet (3) Plaster (scratch coat)	NA	NAD
093020SP02 1st Floor Editorial Area (18) Plaster (scratch coat)	NA	NAD
093020SP03 1st Floor Editorial Area Storage (23) Plaster (scratch coat)	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP04 1st Floor Publisher Closet (33) Plaster (scratch coat)	NA	NAD
093020SP05 1st Floor General Manager Closet (36) Plaster (scratch coat)	NA	NAD
093020SP06 1st Floor Lobby Closet (3) Plaster (finish coat)	NA	NAD
093020SP07 1st Floor Editorial Area (18) Plaster (finish coat)	NA	NAD
093020SP08 1st Floor Editorial Area Storage (23) Plaster (finish coat)	NA	NAD
093020SP09 1st Floor Publisher Closet (33) Plaster (finish coat)	NA	NAD
093020SP10 1st Floor General Manager Closet (36) Plaster (finish coat)	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP11 1st Floor Lunch & Assembly Room (7) Drywall	NA	NAD
093020SP12 1st Floor Camera (81) Drywall	NA	NAD
093020SP13 1st Floor Lunch & Assembly Room (7) Taping Compound	NA	NAD
093020SP14 1st Floor Camera (81) Taping Compound	NA	NAD
093020SP15 1st Floor Machine Shop (9) 1′x1′ Metal Faced Ceiling Tile	NA	NAD
093020SP16 1st Floor Men's Locker Room (62) 1′x1′ Metal Faced Ceiling Tile	NA	NAD
093020SP17 1st Floor Publisher (32) 1′x1′ Z-Spline Ceiling Tile	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP18 1st Floor Publisher (32) 1′x1′ Z-Spline Ceiling Tile	NA	NAD
093020SP19 1st Floor Studio (28) 1′x2′ Z-Spline Ceiling Tile	NA	NAD
093020SP20 1st Floor Advertising Storage (57) 1′x2′ Z-Spline Ceiling Tile	NA	NAD
093020SP21 1st Floor Waiting Room (37) 2′x2′ Z-Spline Ceiling Tile	NA	NAD
093020SP22 1st Floor General Manager (38) 2′x2′ Z-Spline Ceiling Tile	NA	NAD
093020SP23 1st Floor Lunch & Assembly Room (7) 2′x4′ Ceiling Tile	NA	NAD
093020SP24 1st Floor Composing Area – Network Room (64) 2′x4′ Ceiling Tile	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP25 1st Floor Business Manager (39) Wall Panel Adhesive	4.0%	Chrysotile
093020SP26 1st Floor Business Manager (39) Wall Panel Adhesive	Not Analyzed	Positive Stop
093020SP27 1st Floor Women's Toilet (12) Ceramic Floor Tile Set	NA	NAD
093020SP28 1st Floor Passage (59) Ceramic Floor Tile Set	NA	NAD
093020SP29 1st Floor Women's Toilet (12) Ceramic Floor Tile Grout	NA	NAD
093020SP30 1st Floor Passage (59) Ceramic Floor Tile Grout	NA	NAD
093020SP31 1st Floor Women's Toilet (12) Ceramic Wall Tile Adhesive	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP32 1st Floor Women's Toilet (12) Ceramic Wall Tile Adhesive	NA	NAD
093020SP33 1st Floor Women's Toilet (12) Ceramic Wall Tile Grout	NA	NAD
093020SP34 1st Floor Women's Toilet (12) Ceramic Wall Tile Grout	NA	NAD
093020SP35 1st Floor Storage (49) Floor Tile Mastic (black)	2.7%	Chrysotile
093020SP36 1st Floor Storage (49) Floor Tile Mastic (black)	Not Analyzed	Positive Stop
093020SP37 1st Floor Storage (49) 9″x9″ Floor Tile	5.7%	Chrysotile
093020SP38 1st Floor Storage (49) 9″x9″ Floor Tile	Not Analyzed	Positive Stop

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP39 1st Floor Lunch & Assembly Room (7) Floor Tile Adhesive (yellow)	NA	NAD
093020SP40 1st Floor Proofreading Room (21) Floor Tile Adhesive (yellow)	NA	NAD
093020SP41 1st Floor Lunch & Assembly Room (7) 12″x12″ Floor Tile	NA	NAD
093020SP42 1st Floor Plate Room (79) 12″x12″ Floor Tile	NA	NAD
093020SP43 1st Floor Proof Room (21) 12″x12″ Floor Tile (thin)	4.9%	Chrysotile
093020SP44 1st Floor Proof Room (21) 12″x12″ Floor Tile (thin)	Not Analyzed	Positive Stop
093020SP45 1st Floor Storage Room (5) Self-Adhesive Floor Tile (gray)	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP46 1st Floor Storage Room (5) Self-Adhesive Floor Tile (gray)	NA	NAD
093020SP47 1st Floor Storage Room (5) 1′x2′ Self-Adhesive Floor Tile	NA	NAD
093020SP48 1st Floor Storage Room (5) 1′x2′ Self-Adhesive Floor Tile	NA	NAD
093020SP49 1st Floor Publisher (32) Faux Wood Flooring	NA	NAD
093020SP50 1st Floor Publisher (32) Faux Wood Flooring	NA	NAD
093020SP51 1st Floor Publisher Closet (33) Carpet Adhesive	NA	NAD
093020SP52 1st Floor Advertising Passage (56) Carpet Adhesive	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP53		
1st Floor		
Publisher Closet (33)		
Cove Base Adhesive	NA	NAD
093020SP54		
1st Floor		
Business Manager (39)		
Cove Base Adhesive	NA	NAD
093020SP55		
1st Floor		
Publisher Closet (33)		
4″ Cove Base	NA	NAD
093020SP56		
1st Floor		
Business Manager (39)		
4″ Cove Base	NA	NAD
093020SP57		
1st Floor		
Press Room (65) (stored door)	2.3%	Chrysotile
Fire Door Insulation	3.8%	Amosite
093020SP58		
1st Floor		
Press Room (65) (stored door)		
Fire Door Insulation	Not Analyzed	Positive Stop
093020SP59		
1st Floor		
Business Manager (39) (above ceiling)		
Fitting Insulation	3.0%	Chrysotile

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP60 1st Floor Men's Locker Room (62) (above ceiling) Fitting Insulation	Not Analyzed	Positive Stop
093020SP61 1st Floor Development Room (80) (above ceiling) Fitting Insulation	Not Analyzed	Positive Stop
093020SP62 1st Floor Press Room (65) Duct Insulation	23.5%	Chrysotile
093020SP63 1st Floor Press Room (65) Duct Insulation	Not Analyzed	Positive Stop
093020SP64 1st Floor Press Room (65) Duct Insulation	Not Analyzed	Positive Stop
093020SP65 1st Floor Boiler Room (70) Boiler Breeching Insulation	30.8%	Chrysotile
093020SP66 1st Floor Boiler Room (70) Boiler Breeching Insulation	Not Analyzed	Positive Stop

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP67 1st Floor Boiler Room (70) Boiler Breeching Insulation	Not Analyzed	Positive Stop
093020SP68 1st Floor Boiler Room (70) Tank Insulation	3.5%	Chrysotile
093020SP69 1st Floor Boiler Room (70) Tank Insulation	Not Analyzed	Positive Stop
093020SP70 1st Floor Boiler Room (70) Tank Insulation	Not Analyzed	Positive Stop
093020SP71 1st Floor Entry Vestibule (1) Duct Vibration Cloth	80.0%	Chrysotile
093020SP72 1st Floor Entry Vestibule (1) Duct Vibration Cloth	Not Analyzed	Positive Stop
093020SP73 1st Floor Lunch & Assembly Room (7) (interior) Window Glazing Compound	<1.0%	Chrysotile

NA = Not Applicable **NAD = No Asbestos Detected**

Sample Location	% ASBESTOS BY WEIGHT	TYPE OF ASBESTOS
093020SP74 1st Floor Publisher (32) (interior) Window Glazing Compound	<1.0%	Chrysotile
093020SP75 1st Floor Passage (30) Door Window Glazing Compound	NA	NAD
093020SP76 1st Floor Machine Room (9) Door Window Glazing Compound	<1.0%	Chrysotile
093020SP77 Exterior Entry Vestibule (1) Door Caulk	NA	NAD
093020SP78 Exterior Entry Vestibule (1) Door Caulk	NA	NAD
093020SP79 Exterior Front of Building Window Caulk	NA	NAD
093020SP80 Exterior Front of Building Window Caulk	NA	NAD

NA = Not Applicable **NAD = No Asbestos Detected**

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon observations during the inspection and the laboratory analysis results, the following asbestos containing materials were located.

Location	ACM Located	Quantity	Friable/Condition
Throughout			
Fire Doors*	Fire Door Insulation	30 Ea.	Friable/Intact
Throughout			
Behind Metal Radiator Covers**	Fitting Insulation	Unknown	Friable/Unknown
1st Floor			
Vestibule (1)			
Above Ceiling	Fitting Insulation	15 Ln. Ft.	Friable/Intact
	Duct Vibration Joint Cloth	10 Sq. Ft.	Friable/Intact
Lobby (2)			
Throughout	Wall Panel Adhesive	320 Sq. Ft.	Non-Friable/Intact
Circulation (4)			
Throughout	Wall Panel Adhesive	80 Sq. Ft.	Non-Friable/Intact
Storage Room (5)			
Above Ceiling***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Throughout	Floor Tile & Mastic (under 2 layers non-ACM tile)	120 Sq. Ft.	Non-Friable/Intact
Men's Toilet (6)			
Above Ceiling/In Walls***	Fitting Insulation (no access above ceiling, behind walls)	Unknown	Friable/Unknown

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Lunch & Assembly Rm. (7)			
Office Area			
Above Ceiling	Fitting Insulation	8 Ln. Ft.	Friable/Intact
Lunch & Assembly Rm. (7)			
Break Area			
Above Ceiling***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Lunch & Assembly Rm. (7)			
Corridor			
Above Ceiling***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Machine Shop (9)			
Throughout	Floor Tile & Mastic	144 Sq. Ft.	Non-Friable/Intact
Storage (10)			
Throughout	Floor Tile & Mastic	96 Sq. Ft.	Non-Friable/Intact
Women's Toilet (12)			
Above Ceiling/In Walls***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Women's Restroom (13)			
Above Ceiling***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Vault (14)			
Throughout	Floor Tile & Mastic	80 Sq. Ft.	Non-Friable/Intact
Men's Toilet (15)			
Above Ceiling/In Walls	Fitting Insulation	16 Ln. Ft.	Friable/Intact

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Editorial (18)			
Above Ceiling	Fitting Insulation	25 Ln. Ft.	Friable/Intact
Proofreading (21)			
Throughout	Floor Tile – Not Mastic (under carpet)	96 Sq. Ft.	Non-Friable/Intact
Storage (23)			
Throughout	Floor Tile & Mastic	96 Sq. Ft.	Non-Friable/Intact
Storage (24)			
Throughout	Floor Tile & Mastic	144 Sq. Ft.	Non-Friable/Intact
Photo Area/Dark Room (25-26)			
Above Ceiling	Fitting Insulation	5 Ln. Ft.	Friable/Intact
Throughout	Floor Tile Mastic (no tile, under carpet)	306 Sq. Ft.	Non-Friable/Intact
Editorial Manager (27)			
Above Ceiling	Fitting Insulation	7 Ln. Ft.	Friable/Intact
Conference (29)			
Above Ceiling	Fitting Insulation	8 Ln. Ft.	Friable/Intact
Publisher (32)			
Above Ceiling***	Fitting Insulation (no access above ceiling)	Unknown	Friable/Unknown
Throughout	Wall Panel Adhesive	608 Sq. Ft.	Non-Friable/Intact
General Manager Toilet (34)			
Above Ceiling/In Walls	Fitting Insulation	4 Ln. Ft.	Friable/Intact

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Publisher Toilet (35)			
Above Ceiling/In Walls	Fitting Insulation	4 Ln. Ft.	Friable/Intact
General Manager (38)			
Above Ceiling	Fitting Insulation	5 Ln. Ft.	Friable/Intact
Throughout	Wall Panel Adhesive	136 Sq. Ft.	Non-Friable/Intact
Business Manager (39)			
Above Ceiling	Fitting Insulation	12 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	8 Sq. Ft.	Friable/Damaged
Throughout	Wall Panel Adhesive	136 Sq. Ft.	Non-Friable/Intact
Supplies (43)			
Throughout	Floor Tile & Mastic	72 Sq. Ft.	Non-Friable/Intact
Business/Business Machine Room (45-46)			
Above Ceiling	Fitting Insulation	4 Ln. Ft.	Friable/Intact
Throughout	Wall Panel Adhesive	216 Sq. Ft.	Non-Friable/Intact
Storage (49)			
Throughout	Floor Tile & Mastic	72 Sq. Ft.	Non-Friable/Intact
Classified Advertising (50)			
Throughout	Wall Panel Adhesive	224 Sq. Ft.	Non-Friable/Intact
Layout (52)			
Above Ceiling	Fitting Insulation	2 Ln. Ft.	Friable/Intact
Advertising (53)			
Above Ceiling	Fitting Insulation	14 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	12 Sq. Ft.	Friable/Damaged
Throughout	Wall Panel Adhesive	304 Sq. Ft.	Non-Friable/Intact

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Advertising Manager (54)			
Above Ceiling	Fitting Insulation	4 Ln. Ft.	Friable/Intact
Closet/Passage (55-56)			
Above Ceiling	Fitting Insulation	3 Ln. Ft.	Friable/Intact
Storage Room (57)			
Above Ceiling	Fitting Insulation	10 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	2 Sq. Ft.	Friable/Damaged
Below Ceiling	Fitting Insulation	1 Ln. Ft.	Friable/Intact
Throughout	Floor Tile & Mastic	108 Sq. Ft.	Non-Friable/Intact
Passage (59)			
Above Ceiling	Fitting Insulation	1 Ln. Ft.	Friable/Intact
	Roof Drain Insulation	2 Sq. Ft.	Friable/Intact
Showers (60)			
Above Ceiling/In Walls	Fitting Insulation	8 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	12 Sq. Ft.	Friable/Damaged
PBX - Telephone Equipment Room (61)			
Throughout	Floor Tile & Mastic	90 Sq. Ft.	Non-Friable/Intact
Locker Room (62)			
Above Ceiling	Fitting Insulation	10 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	12 Sq. Ft.	Friable/Damaged
Toilet (63)			
Above Ceiling/In Walls	Fitting Insulation	16 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	12 Sq. Ft.	Friable/Damaged

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Composing Area (64)			
Area Built Out into 9 Rooms & 2 Closets			
Above Ceiling	Fitting Insulation	40 Ln. Ft.	Friable/Intact
Throughout	Floor Tile & Mastic	2,925 Sq. Ft.	Non-Friable/Intact
	(1,460 Sq. Ft. under carpet, 300 Sq. Ft. under raised floor)		
Press Room (65)			
Throughout	Fitting Insulation	20 Ln. Ft.	Friable/Intact
	Duct Insulation	65 Ln. Ft.	Friable/Damaged
Toilet (67)			
Above Ceiling/In Walls	Fitting Insulation	12 Ln. Ft.	Friable/Intact
Storage (68)			
Throughout	Fitting Insulation	11 Ln. Ft.	Friable/Intact
Boiler Room (70)			
Throughout	Fitting Insulation	75 Ln. Ft.	Friable/Damaged
	Breeching Insulation	80 Sq. Ft.	Friable/Damaged
	Tank Insulation	100 Sq. Ft.	Friable/Damaged
	Tank Insulation Debris	4 Sq. Ft.	Friable/Damaged
Toilet (74)			
Above Ceiling/In Walls	Fitting Insulation	10 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	12 Sq. Ft.	Friable/Damaged
Delivery & Mail (75)			
Throughout	Fitting Insulation	4 Ln. Ft.	Friable/Intact
Truck Port (76)			
Throughout	Fitting Insulation	20 Ln. Ft.	Friable/Damaged

Location	ACM Located	Quantity	Friable/Condition
1st Floor			
Maintenance Shop (77)			
Throughout	Fitting Insulation	8 Ln. Ft.	Friable/Intact
Roll Storage (78)			
Throughout	Fitting Insulation	30 Ln. Ft.	Friable/Intact
	Roof Drain Insulation	2 Sq. Ft.	Friable/Intact
Plate Room/Development Room/Camera (79-80-81)			
Above Ceiling	Fitting Insulation	15 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	8 Sq. Ft.	Friable/Damaged
Throughout	Floor Tile & Mastic	624 Sq. Ft.	Non-Friable/Intact
Mezzanine			
Mechanical Room			
Throughout	Fitting Insulation	90 Ln. Ft.	Friable/Damaged
	Fitting Insulation Debris	10 Sq. Ft.	Friable/Damaged
	Duct Vibration Joint Cloth	24 Sq. Ft.	Friable/Intact
2nd Floor			
Mechanical Room			
Throughout	Fitting Insulation	90 Ln. Ft.	Friable/Intact
	Roof Drain Insulation	2 Sq. Ft.	Friable/Intact
	Tank Insulation	50 Sq. Ft.	Friable/Intact
Apartment			
Kitchen/Bath			
In Walls***	Fitting Insulation (no access within walls)	Unknown	Friable/Unknown
Throughout	Floor Tile & Mastic (196 Sq. Ft. under carpet)	750 Sq. Ft.	Non-Friable/Intact
Living Room	Wall Panel Adhesive	448 Sq. Ft.	Non-Friable/Intact

*Analysis of fire door insulation confirmed asbestos concentration >1.0%. Therefore asbestos containing door insulation is assumed to be present in all fire doors.

**Due to the limited visibility behind the metal radiator covers throughout the building asbestos containing fitting insulation is assumed to be present at these locations.

***Plaster, drywall, and/or z-spline ceilings prevented access to areas behind walls and/or above ceilings at multiple locations indicated above and asbestos containing fitting insulation is assumed to be present within these cavities.

NOTE: All quantities are approximate. Abatement contractor will need to verify quantities prior to bid production. This survey report is not, in and of itself, an asbestos abatement design document, but can be used as a part of the overall abatement design.

Per the regulatory requirements of the National Emissions Standards for Hazardous Air Pollutants (40 CFR 61), all asbestos containing materials must be removed from a structure prior to its demolition. New York State requires that if a facility is found to have asbestos containing materials, NYS Industrial Code Rule 56 (12 NYCRR Part 56) must be followed when performing any work which might disturb the asbestos containing materials. Any disturbance of asbestos containing materials, including removal, repair, encapsulation, enclosure, etc. must be conducted by trained individuals with valid asbestos certification, and in accordance with federal, state and local regulations.

C.T. Male recommends that the asbestos containing materials be removed prior to renovation or demolition activities by a New York State Licensed Asbestos Abatement Contractor, in accordance with 12 NYCRR Part 56 (Code Rule 56), OSHA 29 CFR 1926.58 and USEPA 40 CFR Part 61, Subpart M (NESHAPS).

Per the requirements of NYSDOL Industrial Code Rule 56 (as amended January 12, 2006), the building owner shall transmit copies of this inspection pre-renovation report to 1) the local agency charged with issuing the building demolition/renovation permit; 2) the local Asbestos Control Bureau Office (Albany District, State Office Campus,

Building 12 Room 157, Albany, New York 12240); and 3) as required, this report is to be kept on site during any abatement activities and/or demolition, renovation, remodeling or repair activities.

If you have any questions regarding this report, please contact this office at (518) 786-7400.

Respectfully submitted,

C.T. MALE ASSOCIATES



Michael F. Sawyer
Managing Industrial Hygienist
NYSDOL License #AH-88-06552 (PM, AST, Inspector and Designer)

APPENDIX A

C.T. MALE ASSOCIATES
CERTIFICATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

C.T. Male Associates Engineering, Surveying,
Architecture & Landscape Architecture & Geology,
D.P.C.

50 Century Hill Drive

Latham, NY 12110

FILE NUMBER: 99-0722
LICENSE NUMBER: 29050
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 10/17/2019
EXPIRATION DATE: 10/31/2020

Duly Authorized Representative – Daniel Reilly:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor

SH 432 (8/12)

C.T. MALE ASSOCIATES

CERTIFICATIONS

C.T. Male's Asbestos Contractor's License:

License Number:	29050
Expiration Date:	10-31-2020

Michael F. Sawyer

NYSDOL Asbestos Certificate Number:	AH88-06552
Inspector:	09-20
Project Designer:	09-20
OSHA 40-HR Certified	

Stephen Pierson

NYSDOL Asbestos Certificate Number:	AH08-07760
Inspector:	03-21
Project Designer:	03-21

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S



MICHAEL F SAWYER
CLASS(EXPIRES)
C ATEC(09/20) D INSP(09/20)
E MGPL(09/20) H PM (09/20)
I PD (09/20)

CERT# 88-06552
DMV# 437658014

MUST BE CARRIED ON ASBESTOS PROJECTS

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S



STEPHEN D PIERSON
CLASS(EXPIRES)
C ATEC(03/21) D INSP(03/21)
H PM (03/21) I PD (03/21)

CERT# 08-07760
DMV# 251759072

MUST BE CARRIED ON ASBESTOS PROJECTS

APPENDIX B

LABORATORY CERTIFICATIONS

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2020

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL J. MUCHA
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual

Serial No.: 61903

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

APPENDIX C

LABORATORY ANALYSIS REPORTS & CHAIN OF CUSTODY

AmeriSci New York
117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

C. T. Male & Associates
Attn: Michael Sawyer
50 Century Hill Drive
P.O. Box 727
Latham, NY 12110

Date Received 10/02/20 **AmeriSci Job #** 220101196
Date Examined 10/03/20 **P.O. #**
ELAP # 11480 **Page** 1 **of** 14
RE: 18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP01 1	220101196-01 **Location:** 1st Fl. / Lobby Closet (3) - Plaster (Scratch Coat)	*No*	NAD [1] (by NYS ELAP 198.1) by Jared C. Clarke on 10/03/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP02 1	220101196-02 **Location:** 1st Fl. / Editorial Area (18) - Plaster (Scratch Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP03 1	220101196-03 **Location:** 1st Fl. / Editorial Area Storage (23) - Plaster (Scratch Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP04 1	220101196-04 **Location:** 1st Fl. / Publisher Closet (33) - Plaster (Scratch Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP05 1	220101196-05 **Location:** 1st Fl. / General Manager Closet (36) - Plaster (Scratch Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP06 2	220101196-06 **Location:** 1st Fl. / Lobby Closet (3) - Plaster (Finish Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP07 2	220101196-07 **Location:** 1st Fl. / Editorial Area (18) - Plaster (Finish Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP08 2	220101196-08 **Location:** 1st Fl. / Editorial Area Storage (23) - Plaster (Finish Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP09 2	220101196-09 **Location:** 1st Fl. / Publisher Closet (33) - Plaster (Finish Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP10 2	220101196-10 **Location:** 1st Fl. / General Manager Closet (36) - Plaster (Finish Coat)	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP11 3	220101196-11 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) - Drywall	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: OffWhite, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose Trace, Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP12 3	220101196-12 **Location:** 1st Fl. / Camera (81) - Drywall	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: OffWhite/Brown, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Cellulose 10 %, Non-fibrous 90 %			
093020SP13 4	220101196-13 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) - Taping Compound	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP14 4	220101196-14 **Location:** 1st Fl. / Camera (81) - Taping Compound	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP15 5	220101196-15 **Location:** 1st Fl. / Machine Shop (9) - 1' x 1' Ceiling Tile (Metal Faced)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 60.3 %			
093020SP16 5	220101196-16 **Location:** 1st Fl. / Men's Locker Rm. (62) - 1' x 1' Ceiling Tile (Metal Faced)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 49.9 %			
093020SP17 6	220101196-17 **Location:** 1st Fl. / Publisher (32) - 1' x 1' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 11.3 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP18 6	220101196-18 **Location:** 1st Fl. / Publisher (32) - 1' x 1' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 16.4 %			
093020SP19 7	220101196-19 **Location:** 1st Fl. / Studio (28) - 1' x 2' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 13 %			
093020SP20 7	220101196-20 **Location:** 1st Fl. / Advertising Lounge (57) - 1' x 2' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 14.5 %			
093020SP21 8	220101196-21 **Location:** 1st Fl. / Waiting Rm. (37) - 2' x 2' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17 %			
093020SP22 8	220101196-22 **Location:** 1st Fl. / General Manager (38) - 2' x 2' Ceiling Tile (Z-Spline)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 11.6 %			
093020SP23 9	220101196-23 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) - 2' x 4' Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 48.4 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP24 9	220101196-24 **Location:** 1st Fl. / Composing Area / Network Rm. (64) - 2' x 4' Ceiling Tile	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 66.2 %			
093020SP25 10	220101196-25 **Location:** 1st Fl. / Business Manager (39) - Wall Panel Adhesive	***Yes***	4 % (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.0 % **Other Material:** Non-fibrous 14 %			
093020SP26 10	220101196-26 **Location:** 1st Fl. / Business Manager (39) - Wall Panel Adhesive		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP27 11	220101196-27 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Floor Set	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP28 11	220101196-28 **Location:** 1st Fl. / Passage (59) - Ceramic Floor Set	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP29 12	220101196-29 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Floor Grout	***No***	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP30 12	220101196-30 **Location:** 1st Fl. / Passage (59) - Ceramic Floor Grout	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Cementitious, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP31 13	220101196-31 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Wall Adhesive	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 53.8 %			
093020SP32 13	220101196-32 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Wall Adhesive	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 54 %			
093020SP33 14	220101196-33 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Wall Grout	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP34 14	220101196-34 **Location:** 1st Fl. / Women's Toilet (12) - Ceramic Wall Grout	*No*	NAD (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 100 %			
093020SP35 15	220101196-35 **Location:** 1st Fl. / Storage (49) - Floor Tile Mastic (Black)	*Yes*	2.7 % (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 2.7 % **Other Material:** Non-fibrous 10.6 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP36 15	220101196-36 **Location:** 1st Fl. / Storage (49) - Floor Tile Mastic (Black)		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP37 16	220101196-37 **Location:** 1st Fl. / Storage (49) - 9" x 9" Floor Tile	***Yes***	5.7 % (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 5.7 % **Other Material:** Non-fibrous 17.2 %			
093020SP38 16	220101196-38 **Location:** 1st Fl. / Storage (49) - 9" x 9" Floor Tile		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP39 17	220101196-39 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) - Floor Tile Adhesive (Yellow)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 42.6 %			
093020SP40 17	220101196-40 **Location:** 1st Fl. / Proof Rm. (21) - Floor Tile Adhesive (Yellow)	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20.8 %			
093020SP41 18	220101196-41 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) - 12" x 12" Floor Tile	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 20.4 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP42 18	220101196-42 **Location:** 1st Fl. / Plate Rm. (79) - 12" x 12" Floor Tile	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.7 %			
093020SP43 19	220101196-43 **Location:** 1st Fl. / Roof Rm. (21) - 12" x 12" Floor Tile (Thin)	*Yes*	4.9 % (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile 4.9 % **Other Material:** Non-fibrous 13.3 %			
093020SP44 19	220101196-44 **Location:** 1st Fl. / Roof Rm. (21) - 12" x 12" Floor Tile (Thin)	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Red, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17.9 %			
093020SP45 20	220101196-45 **Location:** 1st Fl. / Storage Rm. (5) - Self-Adhesive Floor Tile (Gray)	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Blue, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3 %			
093020SP46 20	220101196-46 **Location:** 1st Fl. / Storage Rm. (5) - Self-Adhesive Floor Tile (Gray)	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Blue, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 3.3 %			
093020SP47 21	220101196-47 **Location:** 1st Fl. / Storage Rm. (5) - 1' x 2' Self-Adhesive Floor Tile	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1.9 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP48 21	220101196-48 **Location:** 1st Fl. / Storage Rm. (5) - 1' x 2' Self-Adhesive Floor Tile	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1.9 %			
093020SP49 22	220101196-49 **Location:** 1st Fl. / Publisher (32) - Faux-Wood Flooring	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6 %			
093020SP50 22	220101196-50 **Location:** 1st Fl. / Publisher (32) - Faux-Wood Flooring	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 1.1 %			
093020SP51 23	220101196-51 **Location:** 1st Fl. / Publisher Closet (33) - Carpet Adhesive	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 23.3 %			
093020SP52 23	220101196-52 **Location:** 1st Fl. / Advertising Passage (56) - Carpet Adhesive	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 27.3 %			
093020SP53 24	220101196-53 **Location:** 1st Fl. / Publisher Closet (33) - Cove Base Adhesive	*No*	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Brown, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 38.4 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP54 24	220101196-54 **Location:** 1st Fl. / Business Manager (39) - Cove Base Adhesive	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Yellow, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 17 %			
093020SP55 25	220101196-55 **Location:** 1st Fl. / Publisher Closet (33) - 4" Cove Base	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6 %			
093020SP56 25	220101196-56 **Location:** 1st Fl. / Business Manager (39) - 4" Cove Base	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Tan, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.7 %			
093020SP57 26	220101196-57 **Location:** 1st Fl. / Press Room (65) / Stored Door - Fire Door Insulation	***Yes***	6 % (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: White, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 2.3 %, Amosite 3.8 % **Other Material:** Non-fibrous 94 %			
093020SP58 26	220101196-58 **Location:** 1st Fl. / Press Room (65) / Stored Door - Fire Door Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP59 27	220101196-59 **Location:** 1st Fl. / Business Manager (39) / Above Ceiling - Pipe Fitting Insulation	***Yes***	3 % (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.0 % **Other Material:** Fibrous glass 15 %, Non-fibrous 82 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP60 27	220101196-60 **Location:** 1st Fl. / Men's Locker Rm. (62) / Above Ceiling - Pipe Fitting Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP61 27	220101196-61 **Location:** 1st Fl. / Development Room (80) / Above Ceiling - Pipe Fitting Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP62 28	220101196-62 **Location:** 1st Fl. / Press Room (65) - Duct Insulation	***Yes***	23.5 % (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 23.5 % **Other Material:** Non-fibrous 76.5 %			
093020SP63 28	220101196-63 **Location:** 1st Fl. / Press Room (65) - Duct Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP64 28	220101196-64 **Location:** 1st Fl. / Press Room (65) - Duct Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP65 29	220101196-65 **Location:** 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation	***Yes***	30.8 % (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Heterogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 30.8 % **Other Material:** Non-fibrous 69.2 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP66 29	220101196-66 **Location:** 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP67 29	220101196-67 **Location:** 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP68 30	220101196-68 **Location:** 1st Fl. / Boiler Room (70) - Tank Insulation	***Yes***	3.5 % (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 3.5 % **Other Material:** Fibrous glass 15 %, Non-fibrous 81.5 %			
093020SP69 30	220101196-69 **Location:** 1st Fl. / Boiler Room (70) - Tank Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP70 30	220101196-70 **Location:** 1st Fl. / Boiler Room (70) - Tank Insulation		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP71 31	220101196-71 **Location:** 1st Fl. / Entry Vestibule (1) - Duct Vibration Cloth	***Yes***	80 % (by NYS ELAP 198.1) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Fibrous, Bulk Material **Asbestos Types:** Chrysotile 80.0 % **Other Material:** Synthetic fibers 15 %, Non-fibrous 5 %			

See Reporting notes on last page

PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP72 31	220101196-72 **Location:** 1st Fl. / Entry Vestibule (1) - Duct Vibration Cloth		NA/PS
Analyst Description: Bulk Material **Asbestos Types:** **Other Material:**			
093020SP73 32	220101196-73 **Location:** 1st Fl. / Lunch & Assembly Rm. (7) / Interior - Window Glazing Compound	***Yes***	Trace (<0.25 % pc) [2] (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 3.1 %			
093020SP74 32	220101196-74 **Location:** 1st Fl. / Publisher (32) - Interior - Window Glazing Compound	***Yes***	Trace (<0.25 % pc) [2] (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 2.4 %			
093020SP75 33	220101196-75 **Location:** 1st Fl. / Passage (30) - Door Window Glazing Compound	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 4.5 %			
093020SP76 33	220101196-76 **Location:** 1st Fl. / Machine Room (9) - Door Window Glazing Compound	***Yes***	Trace (<0.25 % pc) [2] (EPA 400 PC) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** Chrysotile <0.25 % pc **Other Material:** Non-fibrous 3.4 %			
093020SP77 34	220101196-77 **Location:** Exterior / Entry Vestibule (1) - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 8.2 %			

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PLM Bulk Asbestos Report

18.8318; 1 Venner Road; Amsterdam, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
093020SP78 34	220101196-78 **Location:** Exterior / Entry Vestibule (1) - Door Caulk	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 7.7 %			
093020SP79 35	220101196-79 **Location:** Exterior / Front Of Building - Window Caulk	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6 %			
093020SP80 35	220101196-80 **Location:** Exterior / Front Of Building - Window Caulk	***No***	NAD (by NYS ELAP 198.6) by Jared C. Clarke on 10/04/20
Analyst Description: Grey, Homogeneous, Non-Fibrous, Bulk Material **Asbestos Types:** **Other Material:** Non-fibrous 0.6 %			

Reporting Notes:

(1) This PLM job was analyzed using Motic BA310 Pol Scope S/N 1190000326

(2) Sample prepared for analysis by ELAP 198.6 method

Analyzed by: Jared C. Clarke

*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis by Appd E to Subpt E, 40 CFR 763 (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite or ELAP 198.6 for NOB samples or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA-LAP, LLC Lab ID 102843, RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054.

Reviewed By: _____ END OF REPORT

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	093020SP01	1	----	----	----	----	NAD	NA
Location: 1st Fl. / Lobby Closet (3) - Plaster (Scratch Coat)								
02	093020SP02	1	----	----	----	----	NAD	NA
Location: 1st Fl. / Editorial Area (18) - Plaster (Scratch Coat)								
03	093020SP03	1	----	----	----	----	NAD	NA
Location: 1st Fl. / Editorial Area Storage (23) - Plaster (Scratch Coat)								
04	093020SP04	1	----	----	----	----	NAD	NA
Location: 1st Fl. / Publisher Closet (33) - Plaster (Scratch Coat)								
05	093020SP05	1	----	----	----	----	NAD	NA
Location: 1st Fl. / General Manager Closet (36) - Plaster (Scratch Coat)								
06	093020SP06	2	----	----	----	----	NAD	NA
Location: 1st Fl. / Lobby Closet (3) - Plaster (Finish Coat)								
07	093020SP07	2	----	----	----	----	NAD	NA
Location: 1st Fl. / Editorial Area (18) - Plaster (Finish Coat)								
08	093020SP08	2	----	----	----	----	NAD	NA
Location: 1st Fl. / Editorial Area Storage (23) - Plaster (Finish Coat)								
09	093020SP09	2	----	----	----	----	NAD	NA
Location: 1st Fl. / Publisher Closet (33) - Plaster (Finish Coat)								
10	093020SP10	2	----	----	----	----	NAD	NA
Location: 1st Fl. / General Manager Closet (36) - Plaster (Finish Coat)								
11	093020SP11	3	----	----	----	----	NAD	NA
Location: 1st Fl. / Lunch & Assembly Rm. (7) - Drywall								
12	093020SP12	3	----	----	----	----	NAD	NA
Location: 1st Fl. / Camera (81) - Drywall								
13	093020SP13	4	----	----	----	----	NAD	NA
Location: 1st Fl. / Lunch & Assembly Rm. (7) - Taping Compound								
14	093020SP14	4	----	----	----	----	NAD	NA
Location: 1st Fl. / Camera (81) - Taping Compound								
15	093020SP15	5	0.103	35.4	4.4	60.3	NAD	NAD
Location: 1st Fl. / Machine Shop (9) - 1' x 1' Ceiling Tile (Metal Faced)								
16	093020SP16	5	0.100	40.4	9.7	49.9	NAD	NAD
Location: 1st Fl. / Men's Locker Rm. (62) - 1' x 1' Ceiling Tile (Metal Faced)								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	093020SP17	6	0.111	13.1	75.6	11.3	NAD	NAD
Location: 1st Fl. / Publisher (32) - 1' x 1' Ceiling Tile (Z-Spline)								
18	093020SP18	6	0.232	13.0	70.6	16.4	NAD	NAD
Location: 1st Fl. / Publisher (32) - 1' x 1' Ceiling Tile (Z-Spline)								
19	093020SP19	7	0.139	14.3	72.7	13.0	NAD	NAD
Location: 1st Fl. / Studio (28) - 1' x 2' Ceiling Tile (Z-Spline)								
20	093020SP20	7	0.180	12.6	72.9	14.5	NAD	NAD
Location: 1st Fl. / Advertising Lounge (57) - 1' x 2' Ceiling Tile (Z-Spline)								
21	093020SP21	8	0.206	13.1	69.9	17.0	NAD	NAD
Location: 1st Fl. / Waiting Rm. (37) - 2' x 2' Ceiling Tile (Z-Spline)								
22	093020SP22	8	0.126	12.9	75.5	11.6	NAD	NAD
Location: 1st Fl. / General Manager (38) - 2' x 2' Ceiling Tile (Z-Spline)								
23	093020SP23	9	0.137	28.9	22.7	48.4	NAD	NAD
Location: 1st Fl. / Lunch & Assembly Rm. (7) - 2' x 4' Ceiling Tile								
24	093020SP24	9	0.253	15.8	18.1	66.2	NAD	NAD
Location: 1st Fl. / Composing Area / Network Rm. (64) - 2' x 4' Ceiling Tile								
25	093020SP25	10	0.150	69.7	12.4	14.0	Chrysotile 4.0	NA
Location: 1st Fl. / Business Manager (39) - Wall Panel Adhesive								
26	093020SP26	10	0.213	69.2	13.0	17.8	NA/PS	NA
Location: 1st Fl. / Business Manager (39) - Wall Panel Adhesive								
27	093020SP27	11	----	----	----	----	NAD	NA
Location: 1st Fl. / Women's Toilet (12) - Ceramic Floor Set								
28	093020SP28	11	----	----	----	----	NAD	NA
Location: 1st Fl. / Passage (59) - Ceramic Floor Set								
29	093020SP29	12	----	----	----	----	NAD	NA
Location: 1st Fl. / Women's Toilet (12) - Ceramic Floor Grout								
30	093020SP30	12	----	----	----	----	NAD	NA
Location: 1st Fl. / Passage (59) - Ceramic Floor Grout								
31	093020SP31	13	0.230	5.9	40.3	53.8	NAD	NAD
Location: 1st Fl. / Women's Toilet (12) - Ceramic Wall Adhesive								
32	093020SP32	13	0.185	7.1	39.0	54.0	NAD	NAD
Location: 1st Fl. / Women's Toilet (12) - Ceramic Wall Adhesive								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
33	093020SP33	14	----	----	----	----	NAD	NA
Location: 1st Fl. / Women's Toilet (12) - Ceramic Wall Grout								
34	093020SP34	14	----	----	----	----	NAD	NA
Location: 1st Fl. / Women's Toilet (12) - Ceramic Wall Grout								
35	093020SP35	15	0.083	65.4	21.3	10.6	Chrysotile 2.7	NA
Location: 1st Fl. / Storage (49) - Floor Tile Mastic (Black)								
36	093020SP36	15	0.078	73.9	14.8	11.3	NA/PS	NA
Location: 1st Fl. / Storage (49) - Floor Tile Mastic (Black)								
37	093020SP37	16	0.104	28.6	48.5	17.2	Chrysotile 5.7	NA
Location: 1st Fl. / Storage (49) - 9" x 9" Floor Tile								
38	093020SP38	16	0.177	27.7	44.5	27.8	NA/PS	NA
Location: 1st Fl. / Storage (49) - 9" x 9" Floor Tile								
39	093020SP39	17	0.110	38.9	18.5	42.6	NAD	NAD
Location: 1st Fl. / Lunch & Assembly Rm. (7) - Floor Tile Adhesive (Yellow)								
40	093020SP40	17	0.119	59.8	19.4	20.8	NAD	NAD
Location: 1st Fl. / Proof Rm. (21) - Floor Tile Adhesive (Yellow)								
41	093020SP41	18	0.225	23.0	56.6	20.4	NAD	NAD
Location: 1st Fl. / Lunch & Assembly Rm. (7) - 12" x 12" Floor Tile								
42	093020SP42	18	0.192	15.5	83.8	0.7	NAD	NAD
Location: 1st Fl. / Plate Rm. (79) - 12" x 12" Floor Tile								
43	093020SP43	19	0.254	23.1	58.7	13.3	Chrysotile 4.9	NA
Location: 1st Fl. / Roof Rm. (21) - 12" x 12" Floor Tile (Thin)								
44	093020SP44	19	0.227	22.5	59.6	17.9	NAD	NA
Location: 1st Fl. / Roof Rm. (21) - 12" x 12" Floor Tile (Thin)								
45	093020SP45	20	0.181	26.9	70.1	3.0	NAD	NAD
Location: 1st Fl. / Storage Rm. (5) - Self-Adhesive Floor Tile (Gray)								
46	093020SP46	20	0.243	26.5	70.2	3.3	NAD	NAD
Location: 1st Fl. / Storage Rm. (5) - Self-Adhesive Floor Tile (Gray)								
47	093020SP47	21	0.123	33.0	65.1	1.9	NAD	NAD
Location: 1st Fl. / Storage Rm. (5) - 1' x 2' Self-Adhesive Floor Tile								
48	093020SP48	21	0.138	34.9	63.2	1.9	NAD	NAD
Location: 1st Fl. / Storage Rm. (5) - 1' x 2' Self-Adhesive Floor Tile								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
49	093020SP49	22	0.109	94.7	4.7	0.6	NAD	NAD
Location: 1st Fl. / Publisher (32) - Faux-Wood Flooring								
50	093020SP50	22	0.096	95.3	3.5	1.1	NAD	NAD
Location: 1st Fl. / Publisher (32) - Faux-Wood Flooring								
51	093020SP51	23	0.154	54.3	22.4	23.3	NAD	NAD
Location: 1st Fl. / Publisher Closet (33) - Carpet Adhesive								
52	093020SP52	23	0.397	67.9	4.8	27.3	NAD	NAD
Location: 1st Fl. / Advertising Passage (56) - Carpet Adhesive								
53	093020SP53	24	0.189	56.3	5.3	38.4	NAD	NAD
Location: 1st Fl. / Publisher Closet (33) - Cove Base Adhesive								
54	093020SP54	24	0.606	42.1	40.9	17.0	NAD	NAD
Location: 1st Fl. / Business Manager (39) - Cove Base Adhesive								
55	093020SP55	25	0.200	37.6	61.9	0.6	NAD	NAD
Location: 1st Fl. / Publisher Closet (33) - 4" Cove Base								
56	093020SP56	25	0.196	57.7	41.5	0.7	NAD	NAD
Location: 1st Fl. / Business Manager (39) - 4" Cove Base								
57	093020SP57	26	----	----	----	----	Chrysotile 2.3 Amosite 3.8	NA
Location: 1st Fl. / Press Room (65) / Stored Door - Fire Door Insulation								
58	093020SP58	26	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Press Room (65) / Stored Door - Fire Door Insulation								
59	093020SP59	27	----	----	----	----	Chrysotile 3.0	NA
Location: 1st Fl. / Business Manager (39) / Above Ceiling - Pipe Fitting Insulation								
60	093020SP60	27	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Men's Locker Rm. (62) / Above Ceiling - Pipe Fitting Insulation								
61	093020SP61	27	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Development Room (80) / Above Ceiling - Pipe Fitting Insulation								
62	093020SP62	28	----	----	----	----	Chrysotile 23.5	NA
Location: 1st Fl. / Press Room (65) - Duct Insulation								
63	093020SP63	28	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Press Room (65) - Duct Insulation								
64	093020SP64	28	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Press Room (65) - Duct Insulation								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
65	093020SP65	29	----	----	----	----	Chrysotile 30.8	NA
Location: 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation								
66	093020SP66	29	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation								
67	093020SP67	29	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Boiler Room (70) - Boiler Breeching Insulation								
68	093020SP68	30	----	----	----	----	Chrysotile 3.5	NA
Location: 1st Fl. / Boiler Room (70) - Tank Insulation								
69	093020SP69	30	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Boiler Room (70) - Tank Insulation								
70	093020SP70	30	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Boiler Room (70) - Tank Insulation								
71	093020SP71	31	----	----	----	----	Chrysotile 80.0	NA
Location: 1st Fl. / Entry Vestibule (1) - Duct Vibration Cloth								
72	093020SP72	31	----	----	----	----	NA/PS	NA
Location: 1st Fl. / Entry Vestibule (1) - Duct Vibration Cloth								
73	093020SP73	32	0.200	7.4	89.6	2.9	Chrysotile <0.25	Chrysotile <1.0
Location: 1st Fl. / Lunch & Assembly Rm. (7) / Interior - Window Glazing Compound								
74	093020SP74	32	0.168	13.1	84.6	2.2	Chrysotile <0.25	Chrysotile <1.0
Location: 1st Fl. / Publisher (32) - Interior - Window Glazing Compound								
75	093020SP75	33	0.172	19.0	76.5	4.5	NAD	NAD
Location: 1st Fl. / Passage (30) - Door Window Glazing Compound								
76	093020SP76	33	0.247	12.5	84.1	3.2	Chrysotile <0.25	Chrysotile <1.0
Location: 1st Fl. / Machine Room (9) - Door Window Glazing Compound								
77	093020SP77	34	0.159	49.0	42.8	8.2	NAD	NAD
Location: Exterior / Entry Vestibule (1) - Door Caulk								
78	093020SP78	34	0.149	48.7	43.6	7.7	NAD	NAD
Location: Exterior / Entry Vestibule (1) - Door Caulk								
79	093020SP79	35	0.201	25.3	74.1	0.6	NAD	NAD
Location: Exterior / Front Of Building - Window Caulk								
80	093020SP80	35	0.357	25.3	74.0	0.6	NAD	NAD
Location: Exterior / Front Of Building - Window Caulk								

See Reporting notes on last page

Table I
Summary of Bulk Asbestos Analysis Results
18.8318; 1 Venner Road; Amsterdam, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM

Analyzed by: Gabriella Morozov; Date Analyzed 10/5/2020 Hitachi#747-Noran

**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples); NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, AIHA-LAP, LLC (PLM) Lab ID 102843.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

Reviewed By:

Relinquished By: S. Pierson Date/Time: 10/1/20

Received By: Date/Time: 10/2/20 1100

Relinquished By: Date/Time:

Received By: Date/Time:

AMERISCI
117 EAST 30TH STREET
NEW YORK, NY 10016
TOLL FREE (800) 705-5227
Fax (212) 679-3114

p1 of 5

BULK SAMPLE SHEET

Company: C.T. Male Associates

AMERISCI JOB #: #220101196

Project Name: 1 Venner Road

Street Address: 50 Century Hill Drive

Project Address: Amsterdam, NY

Client Project #: 18.8318

City: Latham State: New York Zip: 12110

Project Manager: Sawyer

Phone: 518-786-7400

Analysis: X PLM Only X TEM Only X NY ELAP PLM/TEM (198.1/198.6/198.4)
___ ASTM Dust (Microvac) ___ ASTM Dust (Wipe) ___ Other (describe in comments)

E-Mail: m.sawyer@ctmale.com & s.pierson@ctmale.com

TAT: Rush___, 12Hr___, 24 Hr___, 48 Hr___, 72 Hr___, 5D X Mat'l Type: X Bulk ___Air ___Water

Results to: Mike Sawyer & Steve Pierson

Sampled By: S. Pierson

Date Sampled: 09/30/20

Special Instructions or Comments:
(Check)

Positive Stop? Yes X No ___

Field ID #	Sample Location	Sample Description/Material Type (for dust= size of surface area sampled)	Homogenous Area (HA #)
093020SP01	1st Floor Lobby Closet (3)	Plaster (scratch coat)	01
02	Editorial Area (18)		01
03	Editorial Area Storage (23)		01
04	Publisher Closet (33)		01
05	General Manager Closet (36)		01
06	1st Floor Lobby Closet (3)	Plaster (finish coat)	02
07	Editorial Area (18)		02
08	Editorial Area & Storage (23)		02
09	Publisher Closet (33)		02
10	General Manager Closet (36)		02
11	1st Floor Lunch + Assembly Rm. (7)	Drywall	03
12	Camera (81)		03
13	1st Floor Lunch + Assembly Rm. (7)	Taping Compound	04
14	Camera (81)		04
15	1st Floor Machine Shop (9)	1'x1' Metal Faced Ceiling Tile	05
16	Men's Locker Rm. (62)		05
17	1st Floor Publisher (32)	1'x1' Z-Spline Ceilng Tile	06

Relinquished By: S. Pierson / [signature] Date/Time: 10/1/20

Received By: [signature] Date/Time: 10/2/20 1100

Relinquished By: Date/Time:

Received By: Date/Time:

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Company: C.T. Male Associates

AMERISCI JOB #: #220101196

Project Name: 1 Venner Road

Street Address: 50 Century Hill Drive

Project Address: Amsterdam, NY

Client Project #: 18.8318

City: Latham State: New York Zip: 12110

Project Manager: Sawyer

Analysis: X PLM Only X TEM Only X NY ELAP PLM/TEM (198.1/198.6/198.4)
___ ASTM Dust (Microvac) ___ ASTM Dust (Wipe) ___ Other (describe in comments)

Phone: 518-786-7400

E-Mail: m.sawyer@ctmale.com & s.pierson@ctmale.com

TAT: Rush___, 12Hr___, 24 Hr___, 48 Hr___, 72 Hr___, (5D X) Mat'l Type: (X Bulk) Air Water

Results to: Mike Sawyer & Steve Pierson

Sampled By: S. Pierson

Date Sampled: 09/30/20

Special Instructions or Comments:
(Check)

Positive Stop? (Yes X) No ___

Field ID #	Sample Location	Sample Description/Material Type (for dust= size of surface area sampled)	Homogenous Area (HA #)
093020SD18	1st Floor Publisher (32)	1'x1' z-spline Ceiling Tile	06
19	1st Floor Studio (28)	1'x2' z-spline Ceiling Tile	07
20	↓ Advertising Storage (57)	↓	07
21	1st Floor Waiting Rm. (37)	2'x2' z-spline Ceiling Tile	08
22	↓ General Manager (38)	↓	08
23	1st Floor Lunch + Assembly Rm. (7)	2'x4' Ceiling Tile	09
24	↓ Composing Area- Network Rm. (64)	↓	09
25	1st Floor Business Manager (39)	Wall Panel Adhesive	10
26	↓ Business Manager (39)	↓	10
27	1st Floor Women's Toilet (12)	Ceramic Floor Set	11
28	↓ Passage (59)	↓	11
29	1st Floor Women's Toilet (12)	Ceramic Floor Grout	12
30	↓ Passage (59)	↓	12
31	1st Floor Women's Toilet (12)	Ceramic Wall Adhesive	13
32	↓	↓	13
33	↓	Ceramic Wall Grout	14
34	↓	↓	14

Relinquished By: S. Pierson / [signature] Date/Time: 10/1/20

Received By: [signature] Date/Time: 10/2/20 1100

Relinquished By: Date/Time:

Received By: Date/Time:

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p3of5

BULK SAMPLE SHEET
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Company: C.T. Male Associates

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Street Address: 50 Century Hill Drive

Project Address: Amsterdam, NY

Client Project #: 18.8318

City: Latham State: New York Zip: 12110

Project Manager: Sawyer

Phone: 518-786-7400

Analysis: X PLM Only X TEM Only X NY ELAP PLM/TEM (198.1/198.6/198.4)
___ ASTM Dust (Microvac) ___ ASTM Dust (Wipe) ___ Other (describe in comments)

E-Mail: m.sawyer@ctmale.com & s.pierson@ctmale.com

TAT: Rush___, 12Hr___, 24 Hr___, 48 Hr___, 72 Hr___, (5D X) Mat'l Type: (X Bulk) __Air __Water

Results to: Mike Sawyer & Steve Pierson

Sampled By: S. Pierson

Date Sampled: 09/30/20

Special Instructions or Comments:
(Check)

Positive Stop? (Yes X) No ___

Field ID #	Sample Location	Sample Description/Material Type (for dust= size of surface area sampled)	Homogenous Area (HA #)
093020SP35	1st Floor Storage (49)	Floor Tile Mastic (black)	15
36			15
37	1st Floor Storage (49)	9"x9" Floor Tile	16
38			16
39	1st Floor Lunch + Assembly Rm. (7)	Floor Tile Adhesive (yellow)	17
40	Proof Rm. (21)		17
41	1st Floor Lunch + Assembly Rm. (7)	12"x12" Floor Tile	18
42	Plate Rm. (79)		18
43	1st Floor Proof Rm. (21)	12"x12" Floor Tile (thin)	19
44			19
45	1st Floor Storage Rm. (5)	Self-Adhesive Floor tile (gray)	20
46			20
47		1'x2' Self-Adhesive Floor Tile	21
48			21
49	1st Floor Publisher (32)	Faux-Wood Flooring	22
50			22
51	1st Floor Publisher ~~f~~ Closet (33)	Carpet Adhesive	23

Relinquished By: S. Pierson / [signature] Date/Time: 10/1/20

Received By: [signature] Date/Time: 10/2/20 1100

Relinquished By: Date/Time:

Received By: Date/Time:

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Project Name: 1 Venner Road

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Street Address: 50 Century Hill Drive

Project Address: Amsterdam, NY

Client Project #: 18.8318

City: Latham State: New York Zip: 12110

Project Manager: Sawyer

Phone: 518-786-7400

Analysis: _X_ PLM Only _X_ TEM Only _X_ NY ELAP PLM/TEM (198.1/198.6/198.4)
___ ASTM Dust (Microvac) ___ ASTM Dust (Wipe) ___ Other (describe in comments)

E-Mail: m.sawyer@ctmale.com & s.pierson@ctmale.com

TAT: Rush___, 12Hr___, 24 Hr___, 48 Hr___, 72 Hr___, (5D X) Mat'l Type: (X Bulk) __Air __ Water

Results to: Mike Sawyer & Steve Pierson

Sampled By: S. Pierson

Date Sampled: 09/30/20

Special Instructions or Comments:
(Check)

Positive Stop? (Yes X) No ___

Field ID #	Sample Location	Sample Description/Material Type (for dust= size of surface area sampled)	Homogenous Area (HA #)
093020SP52	1st Floor Advertising Passage (56)	Carpet Adhesive	23
53	1st Floor Publisher Closet (33)	Cove Base Adhesive	24
54	Business Manager (39)	Cove Base Adhesive	24
55	1st Floor Publisher Closet (33)	4" Cove Base	25
56	Business Manager (39)		25
57	1st Floor Press Room (65) (Stored Door)	Fire Door Insulation	26
58			26
59	1st Floor Business Manager (39) (above ceiling)	Pipe Fitting Insulation	27
60	Men's Locker Room (62) (above ceiling)		27
61	Development Room (80) (above ceiling)		27
62	1st Floor Press Room (65)	Duct Insulation	28
63			28
64			28
65	1st Floor Boiler Room (70)	Boiler Breeching Insulation	29
66			29
67			29
68	1st Floor Boiler Room (70)	Tank Insulation	30

Relinquished By: S. Pierson Date/Time: 10/1/20

Received By: Date/Time: 10/2/20 1100

Relinquished By: Date/Time:

Received By: Date/Time:

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BULK SAMPLE SHEET

Company: C.T. Male Associates

AMERISCI JOB #: #220101196

Project Name: 1 Venner Road

Street Address: 50 Century Hill Drive

Project Address: Amsterdam, NY

Client Project #: 18.8318

City: Latham State: New York Zip: 12110

Project Manager: Sawyer

Phone: 518-786-7400

Analysis: X PLM Only X TEM Only X NY ELAP PLM/TEM (198.1/198.6/198.4)
___ ASTM Dust (Microvac) ___ ASTM Dust (Wipe) ___ Other (describe in comments)

E-Mail: m.sawyer@ctmale.com & s.pierson@ctmale.com

TAT: Rush___, 12Hr___, 24 Hr___, 48 Hr___, 72 Hr___, (5D X) Mat'l Type: (X Bulk) Air Water

Results to: Mike Sawyer & Steve Pierson

Sampled By: S. Pierson

Date Sampled: 09/30/20

Special Instructions or Comments:
(Check)

Positive Stop? (Yes X) No ___

Field ID #	Sample Location	Sample Description/Material Type (for dust= size of surface area sampled)	Homogenous Area (HA #)
09302020SP69	1st Floor Boiler Room (70)	Tank Insulation	30
70			30
71	1st Floor Entry Vestibule (1)	Duct Vibration Cloth	31
72			31
73	1st Floor Lunch & Assembly Rm (7) (Interior)	Window Glazing Compound	32
74	Publisher (32) (Interior)		32
75	1st Floor Passage (30)	Door Window Glazing Compound	33
76	Machine Room (9)		33
77	Exterior Entry Vestibule (1)	Door Caulk	34
78			34
79	Exterior Front of Building	Window Caulk	35
80			35

APPENDIX D

BUILDING PLAN

FOR CANOPY & PLATFORM SEE ON DWG A-9 SECTION "C"

FOR CANOPY SEE DE ON DWG A-9 SECTION "D"

METAL FC ENCLOSURE 18'-0"

METAL FC ENCLOSURE 42'-3"

METAL FC ENCLOSURE 12'-1"

METAL FC ENCLOSUR 23'-8"

27 ED. MGR.

DARK ROOM 16

25 PHOTO AREA

24 STORAGE

23 STORAGE 7'-9"

21 PROOF 7'-10"

18 EDITORIAL

20 SPORTS 12'-0"

19 WIRE RM 12'-0"

29 CONFERENCE

28 STUDIO

30 PASSAGE

32 PUBLISHER

33 34 35 36 37 38 CLOS.

37 WAITING RM.

38 GEN. MGR. 17'-0"

GLASS DOOR 16'-0"

39 BUS. MGR.

40 CLOS.

42 CLOS.

49 STORAGE 9'-0"

45 BUS. MACH. RM 16'-0"

46 BUS. 25'-9"

47 CLOS.

15 M TOILET

14 VAULT 10'-0"

13 W. REST ROOM

12 W. TOILET

10 STORAGE

9 MACH. SH.

2 LOBBY

4 CIR.

6 M. TOIL.

5 STORAGE RM

7 TOILET

OFFICE

1 LUNCH & ASSEMBLY RM.

7 BREAK RM. 23'-8"

CORRIDOR

50 CLAS AIDS

52 LAYOUT 12'-8"

53 ADVERTISING

54 AD. MGR. 12'-0"

55 LIBRARY 16'-10"

57 STORAGE RM. 8'-3"

58 CLOS.

61 PBX TEL EQ RM 10'-0"

63 TOILET 16'-5"

62 LOCKER RM.

59 SHOWERS

60 PASSAGE

81 CAMERA 12'-0"

80 DEVELOP. RM

79 PLATE RM

64 COMPOSING AREA

65 PRESS ROOM

69 STORAGE 17'-6"

68 STORAGE

67 TOILET

66 LOCKER RM.

70 BOILER RM. 29'-0"

75 DELIVERY & MAIL

76 TRUCK PORT

77 MAINTENANCE SHOP

78 ROLL STORAGE

73 MOWING MACH.

74

72 ELEC. PR. SER.

STRIPING AREA

EXIST REROLL RELOCATED

DRIVE MOTOR

DOCK LEVELER

ROLL UP ST DOOR

ROLL ST DOOR

FIRE WALL

WALL

PARTITION 'A'

PARTITION 'B'

PARTITION 'C'

ALUM PARTITION 'C'

ALUM PART. 'A'

GLASS PARTITION FOR DETAIL SEE DWG A-10

TOILET VENDING MACHINES

SLIVE ALUMINUM WINDOWS ALUM FRAME 2'-0" HIGH 4'-0" ABOVE FLOOR

METAL LATH & CEMENT PLASTER, EXPOSED STAIR SOFFIT SEE DETAIL DWG A-9

PHOTO-MECH. - WELL SEE DET. DWG. NO. A-9

2'-0" x 4'-0" x 1'-0" DEEP PIT W/ 3/8" PL. COVER

12"x12" TRENCH W/ST. PL. COVER

3/4" PLYWOOD PARTITION

3/4" PLYWOOD PART.

DRY WALL

CTR.

DF

UF

SC

EXIT

PBX

ELEC. P.

ELEC. P. & C.

METAL RAILING

METAL FENCE

DITCH

SIDE WALK

5" CURB

"B"

"C"

"D"

TYP. PIPE

179'-3

24'-0" 24'-0" 28'-0" 20'-0" 19'-0" 21'-6" 21'-0" 21'-0"

APPENDIX E

ACM SURVEY
ABATEMENT COST ESTIMATES

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
Throughout					
Fire Doors					
Fire Door Insulation	Ea.	30	$125.00	$3,750.00	**$3,750.00**
Behind Metal Radiator Covers					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
1st Floor					
Vestibule (1)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	15	$75.00	$1,125.00	**$1,125.00**
Duct Vibration Joint Cloth	Sq. Ft.	10	$50.00	$500.00	**$500.00**
Lobby (2)					
Throughout					
Wall Panel Adhesive	Sq. Ft.	320	$6.00	$1,920.00	**$1,920.00**
Circulation (4)					
Throughout					
Wall Panel Adhesive	Sq. Ft.	80	$12.00	$960.00	**$960.00**
Storage Room (5)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Throughout					
Floor Tile & Mastic	Sq. Ft.	120	$9.00	$1,080.00	**$1,080.00**
(under 2 layers non-ACM tile)					
Men's Toilet (6)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Lunch & Assembly Area (7)					
Office Area					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	8	$125.00	$1,000.00	**$1,000.00**
Lunch & Assembly Area (7)					
Break Area					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Lunch & Assembly Area (7)					
Corridor					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Mach. Sh. (9)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	144	$8.00	$1,152.00	**$1,152.00**
Storage (10)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	96	$8.00	$768.00	**$768.00**
Women's Toilet (12)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Women's Restroom (13)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Vault (14)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	80	$12.00	$960.00	**$960.00**
Men's Toilet (15)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	16	$100.00	$1,600.00	**$1,600.00**
Editorial (18)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	25	$100.00	$2,500.00	**$2,500.00**
Proofreading (21)					
Throughout					
Floor Tile - Not Mastic	Sq. Ft.	96	$10.00	$960.00	**$960.00**
(under carpet)					
Storage (23)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	96	$11.00	$1,056.00	**$1,056.00**
Storage (24)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	144	$8.00	$1,152.00	**$1,152.00**

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Photo Area/Dark Room (25-26)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	5	$200.00	$1,000.00	**$1,000.00**
Throughout					
Floor Tile Mastic	Sq. Ft.	306	$6.00	$1,836.00	**$1,836.00**
(no tile, under carpet)					
Editorial Manager (27)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	7	$150.00	$1,050.00	**$1,050.00**
Conference (29)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	8	$150.00	$1,200.00	**$1,200.00**
Publisher (32)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Throughout					
Wall Panel Adhesive	Sq. Ft.	608	$4.00	$2,432.00	**$2,432.00**
General Manager Toilet (34)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	4	$250.00	$1,000.00	**$1,000.00**
Publisher Toilet (35)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	4	$250.00	$1,000.00	**$1,000.00**
General Manager (38)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	5	$200.00	$1,000.00	**$1,000.00**
Throughout					
Wall Panel Adhesive	Sq. Ft.	136	$8.00	$1,088.00	**$1,088.00**
Business Manager (39)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	12	$80.00	$960.00	**$960.00**
Pipe Fitting Insulation Debris	Sq. Ft.	8	$100.00	$800.00	**$800.00**
Throughout					
Wall Panel Adhesive	Sq. Ft.	136	$8.00	$1,088.00	**$1,088.00**

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Supplies (43)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	72	$14.00	$1,008.00	**$1,008.00**
Business/Business Machine Room (45-46)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	4	$250.00	$1,000.00	**$1,000.00**
Throughout					
Wall Panel Adhesive	Sq. Ft.	216	$6.00	$1,296.00	**$1,296.00**
Storage (49)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	72	$14.00	$1,008.00	**$1,008.00**
Classified Advertising (50)					
Throughout					
Wall Panel Adhesive	Sq. Ft.	224	$6.00	$1,344.00	**$1,344.00**
Layout (52)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	2	$500.00	$1,000.00	**$1,000.00**
Advertising (53)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	14	$100.00	$1,400.00	**$1,400.00**
Pipe Fitting Insulation Debris	Sq. Ft.	12	$100.00	$1,200.00	**$1,200.00**
Throughout					
Wall Panel Adhesive	Sq. Ft.	304	$6.00	$1,824.00	**$1,824.00**
Advertising Manager (54)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	4	$250.00	$1,000.00	**$1,000.00**
Closet/Passage (55-56)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	3	$300.00	$900.00	**$900.00**

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Storage Room (57)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	10	$100.00	$1,000.00	**$1,000.00**
Pipe Fitting Insulation Debris	Sq. Ft.	2	$250.00	$500.00	**$500.00**
Below Ceiling					
Pipe Fitting Insulation	Ln. Ft.	1	$100.00	$100.00	**$100.00**
Throughout					
Floor Tile & Mastic	Sq. Ft.	108	$8.00	$864.00	**$864.00**
Passage (59)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	1	$500.00	$500.00	**$500.00**
Roof Drain Insulation	Sq. Ft.	2	$250.00	$500.00	**$500.00**
Showers (60)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	8	$100.00	$800.00	**$800.00**
Pipe Fitting Insulation Debris	Sq. Ft.	12	$50.00	$600.00	**$600.00**
PBX - Telephone Equipment Room (61)					
Throughout					
Floor Tile & Mastic	Sq. Ft.	90	$12.00	$1,080.00	**$1,080.00**
Locker Room (62)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	10	$100.00	$1,000.00	**$1,000.00**
Pipe Fitting Insulation Debris	Sq. Ft.	12	$50.00	$600.00	**$600.00**
Toilet (63)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	16	$75.00	$1,200.00	**$1,200.00**
Pipe Fitting Insulation Debris	Sq. Ft.	12	$50.00	$600.00	**$600.00**
Composing Area (64)					
9 Rooms & 2 Closets					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	40	$100.00	$4,000.00	**$4,000.00**
Throughout					
Floor Tile & Mastic	Sq. Ft.	2,925	$8.00	$23,400.00	**$23,400.00**
(1,460 Sq. Ft. under carpet, 300 Sq. Ft. under raised floor)					

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Press Room (65)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	20	$200.00	$4,000.00	**$4,000.00**
Duct Insulation	Ln. Ft.	65	$25.00	$1,625.00	**$1,625.00**
Toilet (67)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	12	$100.00	$1,200.00	**$1,200.00**
Storage (68)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	11	$100.00	$1,100.00	**$1,100.00**
Boiler Room (70)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	75	$30.00	$2,250.00	**$2,250.00**
Breeching Insulation	Sq. Ft.	80	$25.00	$2,000.00	**$2,000.00**
Tank Insulation	Sq. Ft.	100	$25.00	$2,500.00	**$2,500.00**
Tank Insulation Debris	Sq. Ft.	4	$150.00	$600.00	**$600.00**
Toilet (74)					
Above Ceiling/In Walls					
Pipe Fitting Insulation	Ln. Ft.	10	$100.00	$1,000.00	**$1,000.00**
Pipe Fitting Insulation Debris	Sq. Ft.	12	$50.00	$600.00	**$600.00**
Delivery & Mail (75)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	4	$250.00	$1,000.00	**$1,000.00**
Truck Port (76)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	20	$100.00	$2,000.00	**$2,000.00**
Maintenance Shop (77)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	8	$125.00	$1,000.00	**$1,000.00**
Roll Storage (78)					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	30	$75.00	$2,250.00	**$2,250.00**
Roof Drain Insulation	Sq. Ft.	2	$250.00	$500.00	**$500.00**

Proj. No.: 20.0649 **Date:** 10/9/2020
Project: 1 Venner Road, Amsterdam, NY

LOCATION \ MATERIAL	UNIT	QTY	UNIT PRICE	COST	TOTAL COST
1st Floor - Continued					
Plate Room/Development Room/Camera (79-80-81)					
Above Ceiling					
Pipe Fitting Insulation	Ln. Ft.	15	$100.00	$1,500.00	**$1,500.00**
Pipe Fitting Insulation Debris	Sq. Ft.	8	$50.00	$400.00	**$400.00**
Throughout					
Floor Tile & Mastic	Sq. Ft.	624	$8.00	$4,992.00	**$4,992.00**
Mezzanine					
Mechanical Room					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	90	$50.00	$4,500.00	**$4,500.00**
Pipe Fitting Insulation Debris	Sq. Ft.	10	$100.00	$1,000.00	**$1,000.00**
Duct Vibration Joint Cloth	Sq. Ft.	24	$50.00	$1,200.00	**$1,200.00**
2nd Floor					
Mechanical Room					
Throughout					
Pipe Fitting Insulation	Ln. Ft.	90	$50.00	$4,500.00	**$4,500.00**
Roof Drain Insulation	Sq. Ft.	2	$100.00	$200.00	**$200.00**
Tank Insulation	Sq. Ft.	50	$25.00	$1,250.00	**$1,250.00**
Apartment					
Kitchen/Bath					
In Walls					
Pipe Fitting Insulation	Ln. Ft.	Unknown	TBD	TBD	**TBD**
Throughout					
Floor Tile & Mastic	Sq. Ft.	750	$8.00	$6,000.00	**$6,000.00**
(196 Sq. Ft. under carpet)					
Living Room					
Wall Panel Adhesive	Sq. Ft.	448	$6.00	$2,688.00	**$2,688.00**
SUB-TOTAL					**$136,516.00**
ASSOCIATED ASBESTOS ABATEMENT COSTS (Estimated)					
Project/Air Monitoring			$ 14,500.00		**$ 14,500.00**
NYSDOL Site-Specific Variance			$ 2,500.00		**$ 2,500.00**
ESTIMATED ASSOCIATED COSTS				***SUB-TOTAL***	**$ 17,000.00**

ESTIMATED PROJECT TOTAL **$153,516.00**

SECTION 003143 - PERMIT APPLICATION

PART 1 - GENERAL

1.1 PERMIT APPLICATION INFORMATION

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. This Document and its attachments are not part of the Contract Documents.

B. Permit Application: The building permit for Project has been applied for by the **Owner**. Complete building permit application and file with authorities having jurisdiction within **five** days of **the date of execution of the Contract**.
   1. Copies of the building permit application forms may be obtained from **Montgomery County,** which is also the Authority having Jurisdiction.
   2. Prior to issuance of the Building Permit each prime contractor is required to submit certificates of insurance, including Workers' Compensation and Disability benefits if wages are to be paid to anyone working on the project.
   3. The authority having jurisdiction must be notified of any changes to information contained in the application during the period for which a permit is in effect.

C. The Contractor shall conform to all of the requirements of these permits when performing the Work and the conditions of these permits shall be considered a part of this Contract.
   1. The Contractor shall also assume all of the responsibilities and liabilities of the OWNER as permittee for these permits for the duration of the Contract.

D. All other permits required shall be obtained by the Contractor responsible for the applicable portion of the Work.

END OF SECTION 003143

DOCUMENT 004100 - NOTICE TO BIDDERS - BID FORMS

The complete Bid Forms follow this page. These Bid Forms are to be completely filled in and submitted as the Formal Bid, along with the balance of the Procurement Forms and Supplements in accordance with the Instructions to Bidders. The Project Manual should not be submitted with the Bid Forms.

The Owner may elect to disqualify a bid due to failure to submit a bid in the form requested, failure to bid requested alternates or unit prices, failure to complete entries in all blanks in the Bid Form, or inclusion by the Bidder of any alternates, conditions, limitations or provisions not called for.

This Bid Form is intended for use by Multiple Prime Contracts with AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor." After Bid Opening and Contract Award, a copy of the successful Bidder's complete Bid Forms will be bound with the Agreement.

END OF DOCUMENT 004100

SECTION 004116 - BID FORM

1.1 BID INFORMATION

A. Bidder: _____.
(Name of Bidder)

B. Contract: _____.
(Name of Contract)

C. Date Bid Submitted: _____.
(Month/Day/Year)

D. Project Name: **MONTGOMERY COUNTY HEALTH & HUMAN SERVICES**

E. Project Location: **1 Venner Road, Amsterdam, NY 12010**

F. Owner: **Montgomery County**

G. Owner's Bid No: **16-21**

H. Architect: **C.T. Male Associates**
Engineering, Surveying, Architecture, Landscape Architecture & Geology, DPC

I. Architect Project No: **20.0613**

1.2 CERTIFICATIONS AND BASE BID

A. Base Bid: The undersigned BIDDER, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by **C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.** and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. _____ Dollars ($_____).

2. The above amount may be modified by amounts indicated by the BIDDER on the attached Document 004322 "Unit Prices Form" and Document 004323 "Alternates Form."

1.3 BID GUARANTEE

A. The undersigned BIDDER agrees to execute a contract for this Work in the above amount and to furnish surety as specified within [**10**] **ten** days after a written Notice of Award, if offered within [**45**] **forty-five** days after receipt of bids, and on failure to do so agrees to forfeit to OWNER the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. _____ Dollars ($_____).

B. In the event OWNER does not offer Notice of Award within the time limits stated above, OWNER will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

C. BIDDER further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any individual or entity to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

1. Non-Collusive Bidding Certification - As required by Section 103-d of New York State General Municipal Law, the Bidder must complete and submit with the Bid the certification on page 004519-1.

1.4 TIMEFRAME FOR OFFERS

A. The OWNER reserves the right to make awards within forty-five (45) days after the date of the Bid opening, or for such longer period of time that BIDDER may agree to in writing upon request of OWNER, during which period, Bids must remain firm and cannot be withdrawn. Pursuant to Section 163(9)(e) of the State Finance Law and Section 2-205 of the Uniform Commercial Code when applicable, where an award is not made within the sixty (60) day period or other time specified as set forth in the Bid Documents, the Bids shall remain firm until such later time as either a Contract is awarded or the Bidder delivers to the OWNER written notice of the withdrawal of its Bid. Any Bid which expressly states therein that acceptance must be made within a shorter specified time, may at the sole discretion of the OWNER, be accepted or rejected.

1.5 EXECUTION OF THE CONTRACT

A. Subsequent to the Notice of Intent to Award, and within ten (10) days after the prescribed Form of Agreement is presented to the BIDDER for signature, the BIDDER shall execute and deliver the Agreement to OWNER through the Architect, in such number of counterparts as OWNER may require.

B. OWNER may deem as a default the failure of the BIDDER to execute the Contract and to supply the required bonds when the Agreement is presented for signature within the period of time allowed.

C. Unless otherwise indicated in the Procurement and Contracting Documents or the executed Agreement, the date of commencement of the Work shall be the date of the executed Agreement or a date set forth in a notice to proceed issued by the OWNER, subject to period of time necessary to secure the required approvals from Authorities having jurisdiction.

D. In the event of a default, OWNER may declare the amount of the Bid security forfeited and elect to either award the Contract to the next responsible BIDDER or re-advertise for bids.

1.6 TIME OF COMPLETION

A. The undersigned BIDDER proposes and agrees hereby to commence the Work of the Contract Documents within **7** days on a date specified in a written Notice to Proceed to be issued by Architect, and shall be substantially complete, for occupancy and use by the Owner, within **240** calendar days, in accordance with the Milestone Project Schedule included in the Bid Documents, and completed and ready for final payment within **270** days after the date when the contract time commences to run.

B. BIDDER agrees that the Work will be substantially complete, for occupancy and use by the OWNER, in accordance with paragraph 9.8 of the General Conditions of the Contract for Construction (AIA Document A201-2017) and completed and ready for final payment in accordance with paragraph 9.10 on or before the dates or within the number of calendar days indicated in the Agreement.

C. BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above.

1.7 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned BIDDER acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.

2. Addendum No. 2, dated _____.

3. Addendum No. 3, dated _____.

4. Addendum No. 4, dated _____.

1.8 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

1. Bid Form Supplement - Alternates.
2. Bid Form Supplement - Unit Prices.
3. Bid Form Supplement - Allowances.
4. Bid Form Supplement - Bid Bond Form (AIA Document A310-2010).
5. Bid Form Supplement - Performance Bond Information Form.
6. Bid Form Supplement - Non-Collusion Affidavit.

B. BIDDER agrees upon Bid Opening, if apparent lowest BIDDER, to submit in accordance with the "Instructions to Bidders" within **3** working days the following:

1. Proposed Subcontractors and Suppliers Form (AIA Document G705-2001).
2. Proposed Schedule of Values Form (AIA Document G703-1992 Continuation Sheet).
3. Bidder's Qualification Statement, with supporting data, including a designation of the Work to be performed with the Bidder's own forces and the name and qualifications of the person proposed as the Project superintendent for the Bidder's Work (AIA Document A305-1986).

1.9 CONTRACTOR'S LICENSE AND FEDERAL ID NUMBER

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the State of New York and **County of Montgomery**, if applicable, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

EMPLOYER's Tax ID No. _____.

1.10 SUBMISSION OF BID

A. The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

B. Communication covering this Bid shall be addressed to the Bidder as indicated on the following signature page.

If BIDDER is an INDIVIDUAL

By: _____
(signature)

_____
(print or type individual's name, & title if applicable)

Doing Business As: _____

Business Address: _____

_____

Phone No.: _____

If BIDDER is a PARTNERSHIP

_____
(print or type firm name)

By: _____
(signature of general partner)

_____
(print or type partner's name & title)

Business Address: _____

_____

Phone No.: _____

If BIDDER is a CORPORATION

_____
(print or type corporate name)

_____
(state of incorporation)

By: _____
(signature of president or vice-president, see Instructions to Bidders)

_____
(print or type name & title) (Corporate Seal)

Attest (by corporate secretary or assistant secretary):

_____
(signature)

_____
(name and title)

Business Address: _____

_____

Phone No.: _____

If BIDDER is a JOINT VENTURE

_____
(print or type name of joint venture)

_____ _____
(signature) (name & title)

_____
(address & phone no.)

_____ _____
(signature) (name & title)

_____

(address & phone no.)

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

END OF SECTION 004116

DOCUMENT 004313 - BID SECURITY FORMS

1.1 BID FORM SUPPLEMENT

A. A completed bid bond form is required to be attached to the Bid Form.

1.2 BID BOND FORM

A. AIA Document A310-2010, "Bid Bond," is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.

B. Copies of AIA standard forms may be obtained from The American Institute of Architects; https://www.aiacontracts.org/; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 004313

EXCEPT FOR ABOVE REFERENCED ITEMS WHICH FOLLOW

004313.1

DRAFT

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

« »« »
« »
« »

SURETY:
(Name, legal status and principal place of business)

« »« »
« »
« »

OWNER:
(Name, legal status and address)

Montgomery County
County Annex Building
PO Box 1500 - 20 Park Street
Fonda, NY 12068-1500

BOND AMOUNT: $ « »

PROJECT:
(Name, location or address, and Project number, if any)

Montgomery County Health & Human Services
1 Venner Road
Amsterdam, New York 12010

Architect's Project No. 20.0651

Montgomery County Bid No. 16-21

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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User Notes: (912618027)

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this « » day of « » , « »

	« »
	(Contractor as Principal) *(Seal)*
	« »
(Witness)	*(Title)*
	« »
	(Surety) *(Seal)*
	« »
(Witness)	*(Title)*

DRAFT

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User Notes: (912618027)

DOCUMENT 004314 - PERFORMANCE BOND INFORMATION FORM

1.1 PERFORMANCE BOND INFORMATION

A. The following information is required to be submitted with the Bid Forms.

Project: **Montgomery County Health & Human Services**

Construction Contract Number _____

Name of Contract _____

Name of Contractor _____

Address _____

_____

Bonding Company or Person Issuing Security Bond _____

_____

Address _____

_____

Bonding Company Agent _____

_____

Address _____

_____

Amount of Bond* $ (Contract Price As Awarded) _____

Duration of Bond* (One Year After Date of Final Payment) _____

Identification Number of Bond Assigned When Bond is Furnished

* Amount and duration of bond are in accordance with the General Conditions and any applicable Supplementary Conditions.

END OF DOCUMENT 004314

DOCUMENT 004321 - ALLOWANCE FORM

1.1 BID INFORMATION

A. Bidder: _____.
(Name of Bidder)

B. Contract: _____.
(Name of Contract)

C. Project Name: **MONTGOMERY COUNTY HEALTH & HUMAN SERVICES**

D. Project Location: **1 Venner Road, Amsterdam, NY 12010**

E. Owner: **Montgomery County**

F. Owner's Bid No: **16-21**

G. Architect: **C.T. Male Associates**
Engineering, Surveying, Architecture, Landscape Architecture & Geology, DPC

H. Architect Project No: **20.0651**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Section 012100 "Allowances."

1.3 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this _____ day of _____, **2022**.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004321

DOCUMENT 004322 - UNIT PRICES FORM

1.1 BID INFORMATION

A. Bidder: _____.
(Name of Bidder)

B. Contract: _____.
(Name of Contract)

C. Project Name: **MONTGOMERY COUNTY HEALTH & HUMAN SERVICES**

D. Project Location: **1 Venner Road, Amsterdam, NY 12010**

E. Owner: **Montgomery County**

F. Owner's Bid No: **16-21**

G. Architect: **C.T. Male Associates**
Engineering, Surveying, Architecture, Landscape Architecture & Geology, DPC

H. Architect Project No: **20.0613**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work.

C. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3 UNIT PRICE SCHEDULE

A. CONTRACT NO. 1 - GENERAL CONSTRUCTION:

1. Unit-Price No. 1: Removal of existing carpet tile and replacement with new carpet tile.

_____ dollars ($_____) per unit.

2. Unit-Price No. 2: Removal of existing 4" thick masonry walls.

_____ dollars ($_____) per unit.

3. Unit-Price No. 3: Repairing and restoration of unit masonry wall cracks.

_____ dollars ($_____) per unit.

4. Unit-Price No. 4: Miscellaneous structural steel at existing unsupported masonry wall openings.

_____ dollars ($_____) per unit.

B. CONTRACT NO. 2 – PLUMBING:

1. Unit-Price No. 1: Removal and replacement of existing shutoff valve.

_____ dollars ($_____) per unit.

2. Unit-Price No. 2: Removal and replacement of existing piping insulation.

_____ dollars ($_____) per unit.

3. Unit-Price No. 2: Removal and replacement of existing floor drain.

_____ dollars ($_____) per unit.

4. Unit-Price No. 4: Additional cutting and patching of 6" thick concrete slab-on-grade.

_____ dollars ($_____) per unit.

C. CONTRACT NO. 3 – MECHANICAL (HVAC):

1. Unit-Price No. 1: Removal and replacement of portions of existing metal ductwork.

_____ dollars ($_____) per unit.

2. Unit-Price No. 2: Removal and replacement of existing damper.

_____ dollars ($_____) per unit.

3. Unit-Price No. 3: Removal and replacement of portions of existing ductwork insulation.

_____ dollars ($_____) per unit.

D. CONTRACT NO. 4 – ELECTRICAL:

1. Unit-Price No. 1: Provide rigid metal electrical conduit (RMC).

_____ dollars ($_____) per unit.

2. Unit-Price No. 2: Provide rigid non-metallic electrical conduit (PVC).

_____ dollars ($_____) per unit.

3. Unit-Price No. 3: Provide electrical metallic tubing (EMT).

_____ dollars ($_____) per unit.

E. CONTRACT NO. 5 – FIRE SUPPRESSION:

1. Unit-Price No. 1: Remove and replace existing 1/2 to 1-1/2 inch pipe hangers and supports.

_____ dollars ($_____) per unit.

2. Unit-Price No. 2: Remove and replace existing 2 inch and over pipe hangers and supports.

_____ dollars ($_____) per unit.

1.4 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this _____ day of _____, **2022**.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004322

DOCUMENT 004323 - ALTERNATE FORM

1.1 BID INFORMATION

A. Bidder: _____.
(Name of Bidder)

B. Contract: _____.
(Name of Contract)

C. Project Name: **MONTGOMERY COUNTY HEALTH & HUMAN SERVICES**

D. Project Location: **1 Venner Road, Amsterdam, NY 12010**

E. Owner: **Montgomery County**

F. Owner's Bid No: **16-21**

G. Architect: **C.T. Male Associates**
Engineering, Surveying, Architecture, Landscape Architecture & Geology, DPC

H. Architect Project No: **20.0613**

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

1.3 DESCRIPTION

A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.

E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within [**45**] days of the Notice of Award unless otherwise indicated in the Contract Documents.

F. Acceptance or non-acceptance of any alternates by the Owner shall have no affect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

A. CONTRACT NO. 1 – GENERAL CONSTRUCTION:

1. ALTERNATE No. 1: Provide hollow metal doors with prime paint finish for field applied paint coating, in lieu of, embossed wood grain with factory stained finish.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

2. ALTERNATE No. 2: Deduct Door 143B at Medicaid #1-143, in accordance with Section 081113 "Hollow Metal Doors and Frames," including new opening in existing masonry wall.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

3. ALTERNATE No. 3: Deduct Security Desk casework and countertops only at Lobby 102 to be provided by Owner's Furniture Vendor.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

4. ALTERNATE No. 4: Deduct dimensional lettering and signage at existing canopy as shown on Detail 1/A-201.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

5. ALTERNATE No. 5: Include removal and replacement of existing carpet tile at Child Support 114.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

6. ALTERNATE No. 6: Include removal and replacement of existing carpet tile at Eligibility-140, Office-141, Office-142, Medicaid #1-143 and Medicaid #2-144.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

7. ALTERNATE No. 7: Provide concrete fill of existing ductwork penetrations in Mezzanine floor assembly, including steel framing and supports.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____)

B. CONTRACT NO. 2 – PLUMBING:

1. ALTERNATE No. 1: Provide 1-1/2" Reduced Pressure Zone Assembly (RPZ).

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

2. ALTERNATE No. 2: Relocate existing 3" sanitary riser in Women's Toilet Room 148 and provide wall-mounted flushometer toilet (WC-2).

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

3. ALTERNATE No. 3: Deduct replacement of existing water closet and lavatory faucet at Commissioner's Toilet Room 152.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

4. ALTERNATE No. 4: Deduct replacement of existing water closet and wall hung lavatory at Exec. Toilet Room 155.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

C. CONTRACT NO. 3 – MECHANICAL (HVAC):

1. ALTERNATE No. 1: Remove remaining portions of existing 50x20 RA and SA ductwork up to Penthouse, including existing fire damper at mezzanine floor openings, and cap below ceiling.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

2. ALTERNATE No. 2: Provide application of antimicrobial agents and coatings if active fungal growth is determined.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

3. ALTERNATE No. 3: Provide removal and replacement of existing duct insulation indicated to remain.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

D. CONTRACT NO. 4 – ELECTRICAL:

1. ALTERNATE No. 1: Deduct low profile data floor fittings at Training/Recert 133.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

2. ALTERNATE No. 2: Deduct tele-power poles to be furnished by Owner's Furniture Vendor.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

3. ALTERNATE No. 3: Remove and replace existing wall mounted and toe-kick mounted receptacles (5-total) to be re-fed in Commissioner's Office 151.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

E. CONTRACT NO. 5 – FIRE SUPPRESSION:

1. ALTERNATE No. 1: Replace existing backflow preventer with an RPZ backflow preventer.

   ADD____ DEDUCT____ NO CHANGE____ NOT APPLICABLE____.

   _____ Dollars ($_____).

1.5 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this _____ day of _____, **2022**.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004323

DOCUMENT 004393 - BID SUBMITTAL CHECKLIST

1.1 BID INFORMATION

A. Bidder: _____.

B. Prime Contract: _____.

C. Project Name: **Montgomery County Health & Human Services**

D. Project Location: **1 Venner Road, Amsterdam, NY 12010**

E. Owner: **Montgomery County**

F. Owner Bid No: **16-21**

G. Architect: **C.T. MALE ASSOCIATES**
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

H. Architect Project No: **20.0651**

1.2 BIDDER'S CHECKLIST

A. In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.

B. Attach this completed checklist to the outside of the Submittal envelope.

1. Used the Bid Form provided in the Project Manual.
2. Prepared the Bid Form as required by the Instructions to Bidders.
3. Indicated on the Bid Form the Addenda received.
4. Attached to the Bid Form: Bid Supplement Form - Allowances.
5. Attached to the Bid Form: Bid Supplement Form - Unit Prices.
6. Attached to the Bid Form: Bid Supplement Form - Alternates.
7. Attached to the Bid Form: Bid Bond OR a certified check for the amount required.
8. Attached to the Bid Form: Non-Collusion Affidavit.
9. Bid envelope shows name and address of the Bidder.
10. Bid envelope shows name of Project being bid.
11. Bid envelope shows name of Prime Contract being bid, if applicable.
12. Bid envelope shows time and day of Bid Opening.
13. Verified that the Bidder can provide executed Performance Bond and Labor and Material Bond.
14. Verified that the Bidder can provide Certificates of Insurance in the amounts indicated.

END OF DOCUMENT 004393

DOCUMENT 004436 – PROPOSED SUBCONTRACTORS AND SUPPLIERS FORM

1.1 IDENTIFICATION OF SUBCONTRACTORS AND SUPPLIERS

A. Should Bidder plan to subcontract any part or portion of the Work, list the name and address of all Subcontractors and Suppliers that you propose to use on this Contract and the Work assigned to each. This identification of subcontractors is required of all Bidders as part of their Bid and is in partial fulfillment of requirements in the Instructions to Bidders. Additional data on proposed Subcontractors may be requested from selected Bidders after the Bid Opening in accordance with the Instructions to Bidders.

B. List of Subcontractors using AIA Document G705-2001.
   1. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontracts.org/ library; (800) 942-7732.

END OF DOCUMENT 004436

DRAFT

AIA® Document G705™ – 2001

List of Subcontractors

PROJECT: *(Name and address)*
Montgomery County Health & Human Services
1 Venner Road, Amsterdam, NY 12010

DATE:

TO ARCHITECT: *(Name and address)*
C.T. Male Associates
50 Century Hill Drive, Latham, NY 12110

ARCHITECT'S PROJECT NUMBER:
20.0651

FROM CONTRACTOR: *(Name and address)*

CONTRACTOR'S PROJECT NUMBER:

(List Subcontractors and others proposed to be employed on the above Project as required by the bidding documents.)

Work/Firm Name	Address/Phone	Superintendent

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User Notes: (3B9ADA4B)

SECTION 004473 - PROPOSED SCHEDULE OF VALUES FORM

1.1 BID FORM SUPPLEMENT

A. Submit Proposed Schedule of Values form no later than **three** business days following Architect's request in accordance with Instructions to Bidders.

1.2 PROPOSED SCHEDULE OF VALUES FORM

A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents.
   1. Provide multiple line items for principal material and subcontract amounts in excess of **five** percent of the Contract Sum.

B. Arrange schedule of values consistent with format of **AIA Document G703-1992**.
   1. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontracts.org/ library; (800) 942-7732.

END OF SECTION 004473

DRAFT

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document, G702™–1992, Application and Certification for Payment, or G736™–2009, Project Application and Project Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:	Bid
APPLICATION DATE:	
PERIOD TO:	
ARCHITECT'S PROJECT NO:	20.0651

A	B	C	D	E	F	G		H	I
			WORK COMPLETED						
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
	GRAND TOTAL	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**0.00%**	**$0.00**	**$0.00**

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User Notes:

(3B9ADA0C)

DOCUMENT 004513 - CONTRACTOR'S QUALIFICATION STATEMENT

1.1 CONTRACTOR'S QUALIFICATION STATEMENT

A. Submit Contractor's Qualification Statement no later than **three** business days following Architect's request in accordance with Instructions to Bidders.

1.2 PROPOSED QUALIFICATION STATEMENT FORM

A. Proposed Qualification Statement Form: Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a Contractor's Qualification Statement. The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

B. Arrange information consistent with format of **AIA Document A305-2000.**
   1. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontracts.org/ library; (800) 942-7732.

END OF DOCUMENT 004513

DRAFT

AIA® Document A305™ – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)
« »

SUBMITTED TO:
(Organization name and address.)
Montgomery County
County Annex Building
PO Box 1500 - 20 Park Street
Fonda, NY 12068-1500

TYPE OF WORK TYPICALLY PERFORMED
(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)
« »

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

[« »] Exhibit A – General Information
[« »] Exhibit B – Financial and Performance Information
[« »] Exhibit C – Project-Specific Information
[« »] Exhibit D – Past Project Experience
[« »] Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION
The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

Organization's Authorized Representative Signature

« »
Date

« »
Printed Name and Title

NOTARY
State of: « »
County of: « »
Signed and sworn to before me this « » day of « » « »

Notary Signature

My commission expires: « »

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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User Notes: (879769139)

DRAFT AIA® Document A305™ – 2020 Exhibit A

General Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

§ A.1 ORGANIZATION
§ A.1.1 Name and Location
§ A.1.1.1 Identify the full legal name of your organization.

« »

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

« »

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

« »

§ A.1.1.4 Identify the address of your organization's principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

« »

§ A.1.2 Legal Status
§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

« »

.1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.

« »

.2 If your organization is a partnership, identify its partners and its date of organization.

« »

.3 If your organization is individually owned, identify its owner and date of organization.

« »

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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User Notes: (1345541991)

.4 If the form of your organization is other than those listed above, describe it and identify its individual leaders:

« »

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

« »

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

« »

§ A.1.3.2 How many full-time employees work for your organization?

« »

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

« »

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

« »

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

« »

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

« »

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

« »

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

« »

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

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User Notes: (1345541991)

« »

§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

« »

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

« »

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

« »

§ A.4 REFERENCES

§ A.4.1 Identify three client references:
(Insert name, organization, and contact information)

« »

§ A.4.2 Identify three architect references:
(Insert name, organization, and contact information)

« »

§ A.4.3 Identify one bank reference:
(Insert name, organization, and contact information)

« »

§ A.4.4 Identify three subcontractor or other trade references:
(Insert name, organization, and contact information)

« »

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DRAFT AIA® Document A305™ – 2020 Exhibit B

Financial and Performance Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

§ B.1 FINANCIAL

§ B.1.1 Federal tax identification number:

« »

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization's latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

« »

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

« »

§ B.1.4 Identify your organization's preferred credit rating agency and identification information.
(Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization's identification number or other method of searching your organization's credit rating with such agency.)

« »

§ B.2 DISPUTES AND DISCIPLINARY ACTIONS

§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than $75,000?
(If the answer is yes, provide an explanation.)

« »

§ B.2.2 In the last five years has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management:
(If the answer to any of the questions below is yes, provide an explanation.)

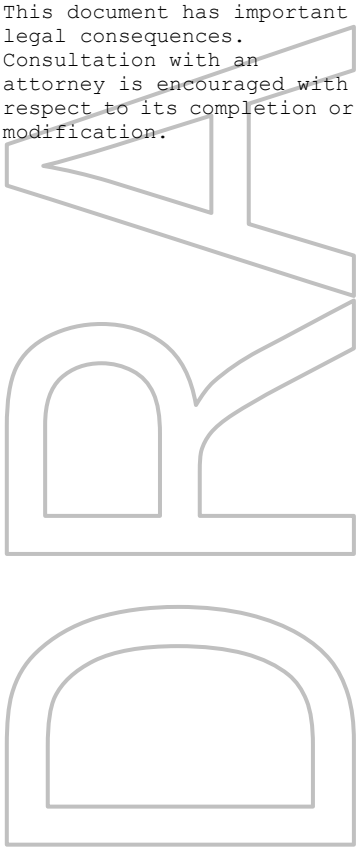
.1 failed to complete work awarded to it?

« »

.2 been terminated for any reason except for an owners' convenience?

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« »

.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than $75,000?

« »

.4 filed any lawsuits or requested arbitration regarding a construction project?

« »

§ B.2.3 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 been convicted of, or indicted for, a business-related crime?

« »

.2 had any business or professional license subjected to disciplinary action?

« »

.3 been penalized or fined by a state or federal environmental agency?

« »

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AIA® Document A305™ – 2020
Exhibit C

Project Specific Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

PROJECT:
(Name and location or address.)

Montgomery County Health & Human Services
1 Venner Road, Amsterdam, NY 12010

CONTRACTOR'S PROJECT OFFICE:
(Identify the office out of which the contractor proposes to perform the work for the Project.)

« »

TYPE OF WORK SOUGHT
(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)

« »

CONFLICT OF INTEREST
Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

« »

§ C.1 PERFORMANCE OF THE WORK
§ C.1.1 When was the Contractor's Project Office established?

« »

§ C.1.2 How many full-time field and office staff are respectively employed at the Contractor's Project Office?

« »

§ C.1.3 List the business license and contractor license or registration numbers for the Contractor's Project Office that pertain to the Project.

« »

§ C.1.4 Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

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« »

§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

« »

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

« »

§ C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

« »

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

« »

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

« »

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

« »

§ C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

« »

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

« »

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

§ C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

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§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?

« »

§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.2? If so, identify.

« »

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

« »

§ C.5.2 Surety company name:

« »

§ C.5.3 Surety agent name and contact information:

« »

§ C.5.4 Total bonding capacity:

« »

§ C.5.5 Available bonding capacity as of the date of this qualification statement:

« »

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AIA® Document A305™ – 2020
Exhibit D

Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☑ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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AIA® Document A305™ – 2020
Exhibit E

Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☑ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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DOCUMENT 004519 - NON-COLLUSION AFFIDAVIT
(Required by Section 103-d of the New York State General Municipal Law.)

A. By submission of this Bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the opening, directly or indirectly, to any other bidder or to any competitor; and

3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

B. A bid shall not be considered for award nor shall any award be made where (A) (1) (2) and (3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore, Where (A) (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of paragraph 1.

_____
(print or type name of Bidder)

By:

_____ _____
(signature) (individual's name & title)

_____ _____

_____ _____

Subscribed and sworn to before me

this _____ day of _____ , 2022

_____
(signature of Notary Public) (Notary Stamp)

END OF DOCUMENT 004519

DOCUMENT 005100 - NOTICE OF AWARD

1.1 BID INFORMATION

A. Bidder: <**Insert successful bidder name**>.

B. Bidder's Address: <**Insert street address, city, state, zip, and telephone**>.

C. Prime Contract: <**Insert prime contract name**>.

D. Project Name: Montgomery County
Health & Human Services

E. Project Location: 1 Venner Road
Amsterdam, NY 12010

F. Owner: Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street
Fonda, New York 12068-1500

G. Owner Bid Number: 16-21

H. Owner's Representative: Eric M. Mead, Commissioner of Public Works
Montgomery County Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500

I. Architect: C.T. Male Associates
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive
Latham, New York 12110

J. Architect Project No.: 20.0651

1.2 NOTICE OF AWARD OF CONTRACT

A. Notice: The above Bidder is hereby notified that their bid, dated <**Insert date**>, for the above Contract has been considered and the Bidder is hereby awarded a contract for <**Insert name of Prime Contract awarded**>.

B. Alternates Accepted: The following alternates have been accepted by Owner and have been incorporated in the Contract Sum:

1. Alternate No. 1: <**Insert alternate title**>.
2. Alternate No. 2: <**Insert alternate title**>.
3. Alternate No. 3: <**Insert alternate title**>.
4. Alternate No. 4: <**Insert alternate title**>.
5. Alternate No. 5: <**Insert alternate title**>.

C. Contract Sum: The Contract Sum is <**Insert written amount**> dollars ($<**Insert numeric amount**>).

1.3 EXECUTION OF CONTRACT

A. Contract Documents: Copies of the Contract Documents will be made available to the Bidder immediately. The Bidder must comply with the following conditions precedent within **10** days of the above date of issuance of the Notice:

1. Deliver to Owner **three** sets of fully executed copies of the Contract Documents.
2. Deliver with the executed Contract Documents Bonds and Certificates of Insurance required by the Contract Documents.

B. Compliance: Failure to comply with conditions of this Notice within the time specified will entitle Owner to consider the Bidder in default, annul this Notice, and declare the Bidder's Bid security forfeited.

1. Within **10** days after the Bidder complies with the conditions of this Notice, Owner will return to the Bidder one fully executed copy of the Contract Documents.

1.4 NOTIFICATION

A. This Notice is issued by:

1. Owner: **Montgomery County.**

2. Authorized Signature:_____(Handwritten signature).

3. Signed By:_____(Type or print name).

4. Title:_____(Type of print title).

END OF DOCUMENT 005100

DOCUMENT 005200 - AGREEMENT

1.1 FORM OF AGREEMENT

A. The following form of Owner/Contractor Agreement shall be used for Project:

1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."
   a. Exhibit A includes Insurance and Bond requirements for Project.

END OF DOCUMENT 005200

DRAFT

AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year «2022.»
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Montgomery County
County Annex Building
PO Box 1500 - 20 Park Street
Fonda, NY 12068-1500

Tel. (518) 853-3351
https://www.co.montgomery.ny.us/

and the Contractor:
(Name, legal status, address and other information)

« »« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

Montgomery County Health & Human Services
1 Venner Road
Amsterdam, New York 12010

Architect's Project No. 20.0651

Montgomery County Bid No. 16-21

The Architect:
(Name, legal status, address and other information)

C.T. Male Associates
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive
Latham, New York 12110

Tel.: (518) 786-7400
www.ctmale.com

The Owner and Contractor agree as follows.

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« »] The date of this Agreement.

[«X»] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

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(Check one of the following boxes and complete the necessary information.)

[«X»] Not later than «two-hundred forty» («240») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
Permanent enclosure, including, but not limited to all exterior masonry cleaning.	Prior to September 30, 2022

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

§ 3.3.4 The Work shall thereafter be completed and ready for final payment, in accordance with the General Conditions of the Contract for Construction, within 30 days following the Substantial Completion Date.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
« »	

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
«Refer to Section 012300»		

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
«Refer to Section 012100»	

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
«Refer to Section 012200»		

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

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Owner and Contractor recognize that time is of the essence of this Agreement and the Owner will suffer financial loss if the Work is not substantially complete within the time specified above, plus any extensions thereof allowed in accordance with the General Conditions of the Contract for Construction. They also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding, the actual loss suffered by the Owner if the Work is not substantially complete on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay the Owner **five hundred dollars** (**$500.00**) for each day that expires after the time specified in Paragraph 3.3 for Substantial Completion until the Work is substantially complete.

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

After Substantial Completion if Contractor shall neglect, refuse or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner **five hundred dollars** (**$500.00**) for each day that expires thirty days following the date of Substantial Completion or after the time specified in the amended Construction Schedule issued by the Architect for completion and readiness for final payment.»

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the «fifteenth» day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the «fifteenth» day of the «following» month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than «forty-five» («45») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;

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.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Five percent (5.00%)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

For operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training for required principal subcontracts retainage shall be in the amount of five-percent (5.00%) of the Contract Sum allocated to that portion of the Work in the Schedule of Values.

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

None

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

When the work or other major portions thereof contemplated by the terms of the Contract are substantially completed, the Contractor shall submit to the Architect a requisition for payment of the remaining amount of the Contract balance, with a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete. Upon receipt of such requisition the Owner shall approve and promptly pay the Contract balance less **two times (2 x)** the value of any remaining items to be completed and an amount necessary to satisfy any claims, lines or judgments against the contractor which have not been suitably discharged. Any claims, liens or judgments referred to in this clause shall pertain to the Project and shall be filed in accordance with the terms of the Contract, and applicable laws.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

.1 Proof of insurance for items stored off site and copies of invoices are to be provided with Application for Payment requesting payment for stored materials

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

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.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

« »

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[«X»] Litigation in a court of competent jurisdiction

[«X»] Other *(Specify)*

«The parties agree that claims brought in New York State Court shall be brought in Montgomery County.»

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

None

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

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ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.1.1 The parties further agree that the provisions of "Appendix A – Standard Clauses for New York State Contracts" promulgated by the New York State Office of General Services Procurement Services Group, current as the date of this Agreement, are a part of this Agreement with the understanding that the term "State" in that document shall be read as "County."

§ 8.1.2 The following provisions are not applicable to this Agreement: Paragraphs 3, 11, and 21.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

Eric M. Mead
Commissioner of Public Works
Montgomery County
Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500

Tel.: (518) 853-3814
Email: emead@co.montgomery.ny.us

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.5.2.1 The Contractor hereby agrees to deliver to the Owner, within seven (7) days of the date of the Owner-Contractor Agreement and prior to bringing any equipment or personnel onto the site of the Work or the Project site, certified copes of all insurance policies procured by the Contractor under or pursuant to Article 10 or, with consent of the Owner, Certificates of Insurance in form and substance satisfactory to the Owner evidencing the required coverages with limits not less than those specified in A101–2017 Exhibit A. The coverage afforded under any Insurance policy obtained under or pursuant to this Subparagraph 8.5.2.1 shall be primary to any valid and collectible insurance carried separately by any of the Indemnities. Furthermore, all policies and Certificates of Insurance shall expressly provide that no less than thirty (30) days' prior written notice shall be given the Owner in the event of material alteration, cancellation, nonrenewal, or expiration of the coverage.

§ 8.5.2.2 The Contractor shall furnish a Performance Bond and Labor and Material Payment Bond meeting all statutory requirements of the State of New York, in form and substance satisfactory to the Owner and, without limitation, complying with the following specific requirements:

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.1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment.

.2 Bonds shall be executed by a responsible surety licensed in New York, with a Best's rating of no less than A/XII, and shall remain in effect for a period not less than two (2) years following the date of Substantial Completion or the time required to resolve any items of incomplete Work and the payment of any disputed amounts, whichever time period is longer.

.3 The Performance Bond and the Labor and Material Payment Bond shall each be in an amount equal to the Contract Sum and all subsequent increases.

.4 The Contractor shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his power of attorney indicating the monetary limit of such power.

.5 Every Bond under this Subparagraph 8.5.2.2 must display the Surety's Bond Number. A rider including the following provisions shall be attached to each Bond.

(i) The Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Any addition, alteration, change, extension of time, or other modification of the Contract Documents, or a forbearance on the part of either the Owner or the Contractor to the other, shall not release the Surety of its obligations hereunder, and notice to the Surety of such matters is hereby waived.

(ii) The Surety agrees that it is obligate under the bonds to any successor, grantee, or assignee of the Owner.

§ 8.5.2.3 The Contractor shall keep the surety informed of the progress of the Work, and, where necessary, obtain the surety's consent to, or waiver of, (i) notice of changes in the Work; (ii) request for reduction or release of retention; (iii) request for final payment, and (iv) any other item required by the Surety. The Owner shall be notified by the Contractor, in writing, of all communications with the Surety. The Owner may, in the Owner's sole discretion, inform the Surety of the progress of the Work and obtain consents as necessary to protect the Owner's rights, interest, privileges, and benefits under and pursuant to any bond issued in connection with the Work.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.6.1 Signatures may be made by electronic methods to the fullest extent permitted by applicable law.

§ 8.6.2 The transmission of Digital Data constitutes a warranty by the Party transmitting Digital Data to the Party receiving Digital Data that the transmitting Party is the copyright owner of the Digital Data, or otherwise has permission to transmit the Digital Data for its use on the Project in accordance with the Authorized Uses of Digital Data established pursuant to the terms of this Agreement.

§ 8.6.3 If a Party transmits Confidential Digital Data, the transmission of such Confidential Digital Data constitutes a warranty to the Party receiving such Confidential Digital Data that the transmitting Party is authorized to transmit the Confidential Digital Data. If a Party receives Confidential Digital Data, the receiving Party shall keep the Confidential Digital Data strictly confidential and shall not disclose it to any other person or entity except as set forth below:

.1 The receiving Party may disclose Confidential Digital Data as required by law or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity. The receiving Party may also disclose the Confidential Digital Data to its employees, consultants or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of Confidential Digital Data as set forth in this Agreement.

§ 8.6.4 By transmitting Digital Data, the transmitting Party does not convey any ownership right in the Digital Data or in the software used to generate the Digital Data. Unless otherwise granted in a separate license, the receiving Party's right to use, modify, or further transmit Digital Data is specifically limited to designing, constructing, using, maintaining, altering and adding to the Project consistent with the terms of this Exhibit, and nothing contained in this Exhibit conveys any other right to use the Digital Data.

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§ 8.7 Other provisions:

§ 8.7.1 The Owner is exempt from payment of sales and compensating use taxes of the State of New York, and of cities, counties, and other subdivisions of the State, hereinafter referred to as subdivisions of the State, pursuant to the provisions of this Contract. These taxes are not to be included in the Bids. This exemption shall apply to:

.1 materials permanently incorporated in the Project;

.2 supplies which are permanently incorporated in the Project; and

.3 materials and furnishings for the Project which are incorporated therein, such as chairs, desks, drapes, and moveable personal property.

This exemption does not, however, apply to tools, machinery, equipment, or other property purchased by, leased by or to the Contractor or Subcontractor, or to supplies or materials not incorporated into the completed Project. The Contractor and his Subcontractors shall be responsible for and shall pay any and all applicable taxes, including sales and compensating use taxes, on such tools, machinery, equipment, or other property, or such unincorporated supplies and materials.

§ 8.7.2 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Work:

.1 that it and its Subcontractors are financially solvent, able to pay all debts as they mature, and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;

.2 that it is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform its obligations hereunder;

.3 that it is authorized to do business in the State of New York and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;

.4 that its execution of this Agreement and its performance thereof is within its duly authorized powers;

.5 that its duly authorized representative has visited the site of the Project, familiarized himself with the local and special conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents; and

.6 that it possess a high level of experience and expertise in the business administration, construction, construction management, and superintendence of projects of the size, complexity, and nature of this particular Project, and it will perform the Work with the care, skill, and diligence of such a Contractor.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations, and performance hereunder. The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the Work called for hereunder.

§ 8.7.3 If any provision of this Contract is determined to be invalid, it shall not affect the validity of any other provision hereof.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(Insert the document incorporated into this Agreement.)

AIA Document C106-2007, Digital Data Licensing Agreement.

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.5 Drawings

Number	Title	Date
As enumerated in Section 000115	List of Drawing Sheets	January, 2022

.6 Specifications

Section	Title	Date	Pages
As enumerated in Section 000110	Table of Contents	January, 2022	Inclusive of all Sections Noted

.7 Addenda, if any:

Number	Date	Pages
« »		

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[«**X**»] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Document 006113	Performance and Payment Bonds	January, 2022	
Document 006114	Surety Company Data	January, 2022	
Document 006216	Certificate of Insurance Form	January, 2022	
Document 007300	Supplementary Conditions Modifications to General Conditions	January, 2022	
Document 007301	Supplementary Conditions Additional Articles	January, 2022	
Document 007343	Wage Rate Requirements	January, 2022	
Document 008010	NY State Contract Provisions	January, 2022	

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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Document	Title	Date	Pages
Document 001116	Invitation to Bid	January, 2022	
Document 002113	Instructions to Bidders	January, 2022	
Document 002513	Pre-Bid Meetings	January, 2022	
Document 002600	Substitution Procedures	January, 2022	
Document 003119	Existing Condition Information	January, 2022	
Document 003126	Hazardous Materials Information	January, 2022	
Document 003143	Permit Application	January, 2022	
Document 004116	Bid Form	January, 2022	
Document 004313	Bid Security Forms	January, 2022	
Document 004314	Performance Bond Information	January, 2022	
Document 004321	Allowance Form	January, 2022	
Document 004322	Unit Prices Form	January, 2022	
Document 004323	Alternates Form	January, 2022	
Document 004336	Subs and Suppliers Form	January, 2022	
Document 004373	Schedule of Value Form	January, 2022	
Document 004513	Qualification Statement	January, 2022	
Document 004519	Non-Collusion Affidavit	January, 2022	
Document 005100	Notice of Award	January, 2022	
Document 006290	Certificate of Owner's Attorney	January, 2022	

It is agreed that the officials signing this agreement on behalf of the respective parties have authority to enter into a binding contract, and the Owner certifies that it has taken all proceedings to have available when necessary, monies sufficient to satisfy the terms of this Contract.

This Agreement entered into as of the day and year first written above.

« »	« »
OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Matthew L. Ossenfort County Executive	« » « »
(Printed name and title)	*(Printed name and title)*

DRAFT

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AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the « » day of « » in the year «2022»
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

Montgomery County Health & Human Services
1 Venner Road
Amsterdam, New York 12010

Architect's Project No. 20.0651

Montgomery County Bid No. 16-21

THE OWNER:
(Name, legal status and address)

Montgomery County
County Annex Building
PO Box 1500 - 20 Park Street
Fonda, NY 12068-1500

THE CONTRACTOR:
(Name, legal status and address)

« »« »
« »
« »
« »

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

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ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ A.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance

§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

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§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

[« »] **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

« »

[« »] **§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

« »

[« »] **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

« »

[« »] **§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

« »

[« »] **§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

« »

[« »] **§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

« »

[« »] **§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction,

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repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

« »

§ A.2.5 Other Optional Insurance.
The Owner shall purchase and maintain the insurance selected below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[« »] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

« »

[« »] **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

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§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than **one million dollars** ($ **1,000,000**) each occurrence, **five million dollars** ($ **5,000,000**) general aggregate, and **five million dollars** ($ **5,000,000**) aggregate for products-completed operations hazard, providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal injury and advertising injury;

.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

.4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.

.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.

.3 Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.

.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.

.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.

.8 Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the Work involves such hazards.

.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

.12 Claims related to communicable disease**.**

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than **one million dollars** ($ **1,000,000**) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers. **If excess or umbrella liability insurance is purchased, Montgomery County shall be included as additional insured(s) on a primary, non-contributory basis.**

§ A.3.2.5 Workers' Compensation at statutory limits. **Coverage must be written to apply within the State of NY and must be written to include coverage for Sole proprietors, Partners, LLC Members or Corporate officers (if such proprietors, partners, members or officers will work on the job site). Please note Acord form is NOT acceptable proof of insurance for Workers' Compensation, Employers Liability and Disability insurance. Private entities exempt from coverage on account of the number of employees or occupation must maintain voluntary compensation coverage at the same limits specified in A.3.2.6.**

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§ A.3.2.6 Employers' Liability with policy limits not less than **five hundred thousand dollars** ($ **500,000**) each accident, **five hundred thousand dollars** ($ **500,000**) each employee, and **five hundred thousand dollars** ($**500,000**) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than **one million dollars** ($ **1,000,000**) per claim and **one million dollars** ($ **1,000,000**) in the aggregate**.**

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants (**including roofing materials**), the Contractor shall procure Pollution Liability insurance, with policy limits of not less than **one million dollars** ($ **1,000,000**) per claim and **one million dollars** ($ **1,000,000**) in the aggregate. **Higher limits may be considered in the event of unforeseen hazardous remediation operations.**

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than **two million dollars** ($ **2,000,000**) per claim and **two million dollars** ($ **2,000,000**) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than **one million dollars** ($ **1,000,000**) per claim and **one million dollars** ($ **1,000,000**) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.
(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[**«X»**] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as

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the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

« »

[« »] **§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for Work within fifty (50) feet of railroad property.

[«X»] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[«X»] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[«X»] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[«X»] **§ A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits
Project Management Protective Liability	**$1,000,000 per occurrence/$2,000,000 aggregate**

§ A.3.4 Performance Bond and Payment Bond
The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum
Payment Bond	**100 percent of the contract sum**
Performance Bond	**100 percent of the contract sum**

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS
Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

A.4.1 Waiver of Subrogation – Contractor and all their subcontractors waive all rights of recovery of damages to the extent of these damages are covered by general liability, umbrella, business auto, workers compensation and employer's liability.

A.4.2 All policies will contain provisions whereby Montgomery County will be notified by insurance carrier within 30 days of insurance policy cancellation for reasons other than non-payment of premium. Village of Cambridge will be notified by contractor within 10 days of insurance policy cancellation for non-payment of premium.

A.4.3 All policies are to be written by carriers acceptable to Montgomery County and with an A.M. Best Rating of no less than A-, VII.

A.4.4 If the Work involves hoisting any real property, contractor is required to maintain Riggers Liability Coverage to insure against physical loss or damage to property being lifted, for an amount not less than $250,000 (higher limits should be provided if the value of the property being hoisted is greater than $250,000).

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A.4.5 All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall specifically name as the additional insured, on a primary non-contributory basis, the following parties:

1. The OWNER, specifically, Montgomery County.
2. The ARCHITECT/ENGINEER, specifically C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.

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DOCUMENT 006000 – FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:
   1. AIA Document A101-2017, "Standard Form of Agreement between Owner and Contractor, Construction Manager as Adviser Edition."
      a. The General Conditions for Project are AIA Document A201-2017, "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition."
   2. The General Conditions are included in the Project Manual.
   3. The Supplementary Conditions and Additional Conditions for Project are separately prepared and included in the Project Manual.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements sections.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontractdocs.org; docspurchases@aia.org; (800) 942-7732.

C. Preconstruction Forms:
   1. Form of Performance Bond and Labor and Material Bond: AIA Document A312-2010, "Performance Bond and Payment Bond."
   2. Form of Certificate of Insurance: AIA Document G715-1991, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."

D. Information and Modification Forms:
   1. Form for Requests for Information (RFIs): AIA Document G716-2004, "Request for Information (RFI)."
   2. Form of Request for Proposal: AIA Document G709-2001, "Work Changes Proposal Request."
   3. Change Order Form: AIA Document G701-2001, "Change Order."
   4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710-1992, "Architect's Supplemental Instructions."
   5. Form of Change Directive: AIA Document G714-2007, "Construction Change Directive."

E. Payment Forms:
   1. Schedule of Values Form: AIA Document G703-1992, "Continuation Sheet."
   2. Payment Application: AIA Document G702-1992/703-1992, "Application and Certificate for Payment and Continuation Sheet."
   3. Form of Contractor's Affidavit: AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
   4. Form of Affidavit of Release of Liens: AIA Document G706A-1994, "Contractor's Affidavit of Payment of Release of Liens."
   5. Form of Consent of Surety: AIA Document G707-1994, "Consent of Surety to Final Payment."

END OF DOCUMENT 006000

DOCUMENT 006113 - PERFORMANCE AND PAYMENT BOND

1.1 PERFORMANCE AND PAYMENT BOND

A. The successful Bidder will be required to furnish a performance bond and a payment bond, each in an amount equal to **100%** of the contract price.

1.2 PERFORMANCE AND PAYMENT FORM

A. Form of Performance Bond and Labor and Material Bond: AIA Document A312-2010 "Performance Bond and Payment Bond."

B. Copies of AIA standard forms may be obtained from The American Institute of Architects; https://www.aiacontracts.org/; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 006113

DRAFT

AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

« »« »
« »
« »

SURETY:
(Name, legal status and principal place of business)

« »« »
« »
« »

OWNER:
(Name, legal status and address)

Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street
Fonda, New York 12068-1500

CONSTRUCTION CONTRACT
Date: «»

Amount: $ « »

Description:
(Name and location)

Montgomery County Health & Human Services
1 Venner Road
Amsterdam, New York 12010

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: « » None « » See Section 16

CONTRACTOR AS PRINCIPAL	**SURETY**
Company: *(Corporate Seal)*	Company: *(Corporate Seal)*
Signature: _____	Signature: _____
Name and Title: « »« »	Name and Title: « »« »

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

« »
« »
« »

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

Eric M. Mead
Commissioner of Public Works
Montgomery County
Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

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§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

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User Notes: (1884648054)

§ 16 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:	« »« »	Name and Title:	« »« »
Address:	« »	Address:	« »

DRAFT

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Payment Bond

CONTRACTOR:
(Name, legal status and address)

« »« »
« »
« »

SURETY:
(Name, legal status and principal place of business)

« »« »
« »
« »

OWNER:
(Name, legal status and address)

Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street
Fonda, New York 12068-1500

CONSTRUCTION CONTRACT
Date: «»

Amount: $ « »

Description:
(Name and location)

Montgomery County Health & Human Services
1 Venner Road
Amsterdam, New York 12010

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: « » None « » See Section 18

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*

Signature: _____
Name and Title: « »« »

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and Title: « »« »

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

« »
« »
« »

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

Eric M. Mead
Commissioner of Public Works
Montgomery County
Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

.2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

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§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

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§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:	« »« »	Name and Title:	« »« »
Address:	« »	Address:	« »

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DOCUMENT 006114 - SURETY COMPANY DATA

Attach here the following:

1. POWER OF ATTORNEY - duly certified copy of power of attorney or other certificate of authority when bond is executed by agent, officer, or other representative of Surety.

2. POWER OF ATTORNEY AUTHORIZATION - duly certified extract from by-laws or resolutions of Surety under which power of attorney or other certificate of authority of its agent, officer, or other representative was issued.

3. FINANCIAL STATEMENT - certified copy of latest published financial statement of assets and liabilities of Surety.

END OF DOCUMENT 006114

DOCUMENT 006216 - CERTIFICATE OF INSURANCE FORM ATTACHMENT PAGE

Attach insurance certificates here.

END OF DOCUMENT 006216

DOCUMENT 006290 - CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, **Meghan M. Manion,**

the duly authorized and acting County Attorney for **Montgomery County**, do hereby certify that I have examined the attached contract and the Surety Bond(s) attached thereto and the manner of execution thereof; and that I am of the opinion that each of the aforesaid agreements has been executed in accordance with the terms, conditions, and provisions thereof.
.

Signed: _____

Name: **Meghan M. Manion**

Title: **County Attorney**

Address: **20 Park Sreet**
Fonda, NY 12068

Contact Information: **Phone: 518-853-4304**

Fax: 518-853-8220

Date: _____

END OF DOCUMENT 006290

DOCUMENT 007200 - GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

1. AIA Document A201-2017 attached (39 pages).

END OF DOCUMENT 007200

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
Montgomery County Health & Human Services
1 Venner Road, Amsterdam, New York 12010

THE OWNER:
(Name, legal status and address)
Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street, Fonda, New York 12068-1500

THE ARCHITECT:
(Name, legal status and address)
C.T. Male Associates
Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive, Latham, New York 12110

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

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G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

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§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

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§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

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specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

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§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

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§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

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.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner or a Separate Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

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§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

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§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

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.1 employees on the Work and other persons who may be affected thereby;
.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

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promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act

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or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

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The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and

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approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- **.2** that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;
- **.2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- **.3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

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§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

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§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

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§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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DOCUMENT 007300 - SUPPLEMENTARY CONDITIONS MODIFICATIONS TO GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the General Conditions of the Contract for Construction (AIA Document A201 - 2017) and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

Articles and paragraphs herein bear numbers corresponding to those parts of the General Conditions that are being modified. Each modification to the General Conditions of the Contract for Construction made herein corresponds to the part of the General Conditions being modified by these Supplementary Conditions Modifications. The Contractor is responsible to cross-reference each document accordingly.

ARTICLE 1 – GENERAL PROVISIONS

1.1 Basic Definitions

The terms used in these Supplementary Conditions, which are defined in the General Conditions of the Contract for Construction (AIA Document A201 - 2017), have the meanings assigned to them in the General Conditions.

Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

1.1.9 ARCHITECT/ENGINEER - The person, firm, or corporation named as the ARCHITECT in the Agreement, or the duly appointed employees and representatives of the named ARCHITECT.

1.1.10 DIRECTED, REQUIRED, APPROVED, ACCEPTABLE - Whenever these terms or words of like import are used to refer to the Work or its performance, they shall mean direction by, or approval by, or equivalent action of or by the ARCHITECT/ENGINEER. Such direction or approval is subject to the limitations described in Section 4.2 of the General Conditions.

1.1.11 FURNISH: To supply necessary materials and equipment at the project site.

1.1.12 INSTALL: To place and/or assemble furnished materials and equipment in position for the use intended.

1.1.13 PROVIDE: The act of both furnishing and installing.

1.2 Correlation and Intent of the Contract Documents

1.2.1.1 In the event of conflicts or inconsistencies between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the Contractor shall (1) provide the better quality or greater quantity of work or (2) comply with the more stringent requirements; either or both in accordance with the ARCHITECT/ENGINEER's interpretation. Interpretations will be based on the following priorities:

1. Modifications.
2. The Agreement.
3. Addenda, with those of later date having precedence over those of earlier date.
4. The Supplementary Conditions.
5. The General Conditions of the Contract for Construction.
6. Division 1 of the Specifications.
7. Drawings and Divisions 2-49 of the Specifications.
8. Other documents specifically enumerated in the Agreement as part of the Contract Documents.

1.2.1.2 In the case of conflicts or discrepancies between Drawings and Division 2-49 of the Specifications, or within or among the Contract Documents and not clarified by Addendum, the ARCHITECT/ ENGINEER will determine which takes precedence in accordance with subparagraphs 4.2.11, 4.2.12, and 4.2.13.

1.2.4 Within the Contract Documents to which each Prime Contractor is responsible, any Work included by reference in any section to another specification section shall be included as Work under the Contract, whether or not it is called for under the Section referred to. Failure to cross-reference such items shall not relieve the Prime Contractor from the obligations to provide such work.

ARTICLE 2 – OWNER

2.1 General

2.1.1.1 OWNER has designated a Project Representative to serve as an advisor to Owner and to provide assistance in administering the Contract for Construction between Owner and each Contractor, and to be at the project site on a part-time basis to assist in administration and coordination of the construction phase. The Project Representative shall monitor the CONTRACTOR's construction schedule and alert the OWNER to conditions that may affect the CONTRACTOR's ability to complete the work in accordance with the schedule; attend and report to the OWNER on weekly job site meetings and/or pre-installation meetings as required by the Contract Documents; generally observe the systems and equipment testing as required in the Specifications and review nonconforming test results with the CONTRACTOR; review the CONTRACTOR's on-site copy of the Drawings and other modifications at intervals appropriate to the stage of construction and notify the OWNER of any apparent failure by the CONTRACTOR to maintain up-to-date records; review of CONTRACTOR's initial requisitions for payment with the ARCHITECT/ENGINEER; maintain a log of observations at the Project site, supplemental instructions and interpretations given to the CONTRACTOR by the ARCHITECT/ENGINEER; and generally enforcing contract requirements.

2.1.2 Delete the last sentence in its entirety.

2.2 Evidence of the Owner's Financial Arrangements

2.2.1 Delete subparagraph in its entirety.

2.3 Information and Services Required of the Owner

2.3.5.1 In the preparation of Drawings and Specifications, ARCHITECT/ENGINEER or ARCHITECT/ ENGINEER's Consultants relied upon the following as-found documents of the existing conditions at the project Site:

Drawings titled "Evening Recorder, W.J. Kline & Sons, Pub. Amsterdam, N.Y.", dated February 8, 1966, prepared by Lockwood Green Engineers, Inc., 200 Park Ave, New York 17, NY.

2.3.5.2 Copies of drawings itemized herein that are not included with Bidding Documents may be examined at ARCHITECT/ENGINEER's office or the Owner's project representative's office during regular business hours. Please call for an appointment. These reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which the CONTRACTOR may rely as identified and established above are incorporated therein by reference. CONTRACTOR is not entitled to rely upon other information and data utilized by ARCHITECT/ENGINEER and ARCHITECT/ENGINEER's Consultants in the preparation of the Drawings and Specifications.

2.2.5.3 No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.

2.2.5.3 The asbestos containing material survey information which is being made available reports whether there are asbestos containing materials in the structure prior to renovation activities. The survey included identification of suspect asbestos containing materials, quantification, and bulk sampling of suspect asbestos containing materials. Laboratory analysis was performed to determine the presence and type of asbestos in sampled materials. Any material is considered asbestos containing if it contains one percent, or more, asbestos by weight. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions.

2.2.5.4. The information and services provided contain no other technical data upon which the CONTRACTOR may rely. The OWNER and the ARCHITECT/ENGINEER assume no responsibility or liability for the accuracy of information or on other existing conditions present. This information was intended for Bid cost purposes only, and is made available to bidders only that they may have access to identical information available. It is presented in good faith, but is not intended as a substitute for personal investigations, interpretations, or judgment of the CONTRACTOR. This information is not guaranteed and does not form part of the Contract Documents.

2.3.6.1 Additional copies of the Contract Drawings and Project Manuals will be furnished at cost of reproduction and postage and handling when applicable. Subcontractors and other entities desiring copies of drawings and project manuals shall obtain them via one of the Prime Contracts.

2.3.6.2 Electronic copies of CAD Drawings of the Contract Drawings will be provided by ARCHITECT/ENGINEER for CONTRACTOR's use in preparing submittals, through access to a project Web site administered by the ARCHITECT/ENGINEER for purposes of managing communication and documents during the construction stage. CONTRACTOR shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement or an Agreement form acceptable to the OWNER and ARCHITECT/ENGINEER.

ARTICLE 3 – CONTRACTOR

3.2 Review of Contract Documents and Field Conditions by Contractor

3.2.5 The OWNER is entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for evaluating and responding to the CONTRACTOR’s requests for information that are not prepared in accordance with the Contract Documents, or where such information is available to the CONTRACTOR from a careful study and comparison of the Contract Documents, field conditions, other OWNER-provided information, CONTRACTOR prepared coordination drawings, or prior Project correspondence or documentation.

3.3 Supervision and Construction Procedures

3.3.4 During periods of active construction, consult daily and cooperate with the OWNER’s Project Representative. On a **continuous and daily basis**, keep the OWNER, OWNER’s Project Representative and ARCHITECT/ENGINEER notified of when work will be starting, restarting, suspended and temporarily or permanently concluded.

3.3.5 During inclement, stormy, or freezing weather, no work shall be done, except as may be performed in a manner satisfactory to secure first-class construction and by permission of the ARCHITECT/ENGINEER. During freezing weather, approved precautions shall be taken to remove ice and frost from materials used and to prevent completed portions of the work from freezing by heating the water, sand, gravel, broken stone, bricks, or other materials and by covering and heating the completed portions of the work. The cost of such precautions shall be borne by the CONTRACTOR. If, in the opinion of the ARCHITECT/ENGINEER, any work or materials shall have been damaged or injured by reason of failure on the part of the CONTRACTOR or any Subcontractor to so protect his work, such work and materials shall be removed and replaced at the expense of the CONTRACTOR.

3.4 Labor and Materials

3.4.2.1 During Bidding, the Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in Division 1 of the Specifications, or those substitute or materials and equipment approved by the ARCHITECT/ENGINEER and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed substitute or "or-equal" item. Request for the ARCHITECT/ENGINEER's clarification of materials and equipment considered "or-equal" prior to the Effective Date of the Agreement must be received by the ARCHITECT/ENGINEER at least **10 days** prior to the date for receipt of Bids.

No item of material or equipment will be considered by the ARCHITECT/ENGINEER as a substitute unless written request for approval has been submitted by Bidder and has been received by the ARCHITECT/ENGINEER at least **10 days** prior to the date for receipt of Bids. The burden of proof of the merit of the proposed item is upon the Bidder. The ARCHITECT/ENGINEER's decision of approval or disapproval of a proposed item will be final.

If the ARCHITECT/ENGINEER approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

3.4.2.2 After the Contract has been executed, the OWNER and ARCHITECT/ENGINEER will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the CONTRACTOR:

.1 represents that the CONTRACTOR has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
.2 represents that the CONTRACTOR will provide the same warranty for the substitution that the CONTRACTOR would for that specified.
.3 certifies that the cost data presented is complete and includes all related costs under the Contract except the ARCHITECT/ENGINEER's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
.4 will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

3.4.2.3 The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER to evaluate the CONTRACTOR's proposed substitutions and to make agreed-upon changes in the Drawings and Specifications made necessary by the OWNER's acceptance of such substitutions.

3.6 Taxes

3.6.1 SALES TAX EXEMPTION:

All Bid prices shall include all New York State and local taxes required to be paid by the CONTRACTOR except those sales and compensating use taxes exempted by the following provisions.

The OWNER is exempt from payment of sales and compensating use taxes of the State of New York, and of cities, counties, and other subdivisions of the State, hereinafter referred to as subdivisions of the State, pursuant to the provisions of this Contract. These taxes are not to be included in the Bids. This exemption shall apply to:
1. materials permanently incorporated in the Project;
2. supplies which are permanently incorporated in the Project; and
3. materials and furnishings for the Project which are incorporated therein, such as chairs, desks, drapes, and moveable personal property.

This exemption does not, however, apply to tools, machinery, equipment, or other property purchased by, leased by or to the CONTRACTOR or Subcontractor, or to supplies or materials not incorporated into the completed Project. The CONTRACTOR and his Subcontractors shall be responsible for and shall pay any and all applicable taxes, including sales and compensating use taxes, on such tools, machinery, equipment, or other property, or such unincorporated supplies and materials.

3.7 Permits, Fees, Notices and Compliance with Laws

3.7.1.1 The OWNER shall pay for only the following specific permits:
.1 **Montgomery County Building Permit.**

3.7.1.2 Available copies of the permit applications are available from the OWNER, which is also the Authority having Jurisdiction.

3.7.1.3 The CONTRACTOR shall conform to all of the requirements of these permits when performing the Work and the conditions of these permits shall be considered a part of this Contract. The CONTRACTOR shall also assume all of the responsibilities and liabilities of the OWNER as permittee for these permits for the duration of the Contract.

3.7.1.4 All other permits required shall be obtained by the CONTRACTOR responsible for the Work.

3.8 Allowances

3.8.2.3 Delete sub-paragraph in its entirety.

3.10 Contractor's Construction and Submittal Schedules

3.10.4 CONTRACTOR is responsible for taking such actions as are necessary to make sure that all Subcontractors perform their work in such sequence and in separate stages as required by the project and the work of other CONTRACTORS. The work must be carried out in strict accordance with the approved schedule, which may involve intermittent work in any particular area. The work shall be done expeditiously with adequate forces and shall be completed in the specified time.

3.12 Shop Drawings, Product Data and Samples

3.12.7.1 Requirements noted in the Contract Documents for submission of informational submittals, including Product Data and Samples, other than those requiring selection of finishes by the Owner, and Shop Drawings required for coordination with other portions of the Work, may be waived where the Contractor provides those Products indicated as the Basis of Design.

3.12.11 The ARCHITECT/ENGINEER's review of CONTRACTOR's submittals shall be limited to examination of an initial submittal and **two** resubmittals. The ARCHITECT/ENGINEER's review of additional submittals will be made only with consent of the OWNER after notification by the ARCHITECT/ENGINEER. The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for evaluation of such additional resubmittals.

3.13 Use of Site

3.13.1 The CONTRACTOR shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated. The CONTRACTOR shall maintain portions of the existing building affected by construction operations in a weathertight condition throughout construction period. The CONTRACTOR shall also maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. The CONTRACTOR shall repair damage caused by construction operations to the satisfaction of the Owner's Project Representative.

3.15 Cleaning Up

3.15.1.1 At the end of each workday, the CONTRACTOR shall secure all power tools and other potentially dangerous tools and equipment, and shall remove means of access to areas of the Work site, so as to further protect the safety of occupants of the premises during such off-work hours.

3.15.3 All debris required to be removed from the project shall be removed in accordance with all applicable rules, regulations and statutes, which may pertain thereto. The CONTRACTOR shall warrant that all debris shall be disposed of in accordance with all rules, regulations and statutes applicable thereto and at a facility permitted and authorized to receive materials of the type and nature so removed from the premises. The CONTRACTOR shall hold the OWNER free and harmless of, from or concerning any claimed liability resulting from the improper or unlawful removal and disposal of such debris.

ARTICLE 4 – ARCHITECT

4.2 Administration of the Contract

4.2.1.1 OWNER will furnish a part-time Project Representative at the site who is not the ARCHITECT/ENGINEER's Representative or Employee. The OWNER's Project Representative's duties, responsibilities and limitations of Authority are as set forth by the OWNER, as enumerated in the Contract Documents.

4.2.2.1 The OWNER is entitled to reimbursement from the CONTRACTOR for amounts paid to the ARCHITECT/ ENGINEER for additional site visits made necessary by the fault, neglect or request of the CONTRACTOR.

4.2.7.1 In no case will the ARCHITECT/ENGINEER's review period on any submittal be less than **seven days** after receipt of the submittal from the CONTRACTOR. The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for expediting review of submittals for other than the basis of design products listed in Contract Documents, when requested by the CONTRACTOR.

4.2.14.1 CONTRACTOR's requests for information shall be prepared and submitted in accordance with Division 1 "General Requirements" sections on the form included in the Contract Documents or current authorized edition of AIA Document G716. The ARCHITECT will return without action requests for information that do not conform to the Contract Documents.

ARTICLE 5 - SUBCONTRACTORS

5.2 Award of Subcontracts and Other Contracts for Portions of the Work

5.2.1.1 Not later than **three** days after the date of commencement of the Work, the CONTRACTOR shall furnish in writing to the OWNER and ARCHITECT/ENGINEER the names of persons or entities proposed as manufacturers, fabricators or material suppliers for the products, equipment and systems identified in the General Requirements (Division 1 of the Specifications) and, where applicable, the name of the installing Subcontractor.

5.2.4.1 Substitution of subcontractors shall be submitted in accordance with the provisions for Substitutions included in the General Requirements (Division 1 of the Specifications).

5.2.4.2 The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER to evaluate the CONTRACTOR's proposed substitution of subcontractors. The ARCHITECT/ENGINEER's review of additional submittals AS A RESULT OF SUCH SUBSTITUTION will be made only with consent of the OWNER after notification by the ARCHITECT/ENGINEER. The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for evaluation of such additional resubmittals.

ARTICLE 7 – CHANGES IN THE WORK

7.1 General

7.1.4 The combined overhead and profit included in the total cost to the OWNER of a change on the Work shall be based on the following schedule:

7.1.4.1 For the CONTRACTOR, for Work performed by the CONTRACTOR's own forces, the CONTRACTOR's Fee shall be **ten percent (10%)** for overhead plus **five percent (5%)** for profit, subject to the following exclusions:

.1 No overhead and profit shall be allowed on the premium portion of overtime pay.

.2 No overhead and profit shall be applied to payroll taxes. Payroll taxes include FICA, unemployment insurance, disability insurance, workman's compensation, and personal liability and property damage insurance.

7.1.4.2 For the CONTRACTOR, for Work performed by the CONTRACTOR's Subcontractors, the CONTRACTOR's Fee shall be **ten percent (10%)** for combined overhead and profit.

7.1.4.3 If a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee shall be **five percent (5%)** for overhead plus **ten percent (10%)** for profit.

7.1.4.4 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs, including labor, materials, and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also.

ARTICLE 8 – TIME

8.2 Progress and Completion

8.2.1.1 The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within **ten days** after the Effective Date of the Agreement. **In no event will the Contract Time commence to run later than the 45th day after the day of Bid opening or the 10th day after the Effective Date of the Agreement, whichever date is earlier.**

8.2.2.1 **Evidence of Insurance**

When CONTRACTOR delivers the executed Agreement to OWNER, CONTRACTOR shall furnish all his required insurance certificates as provided in AIA Document A101-2017 Exhibit A attached to the Agreement prior to bringing any equipment or personnel on to the site of the Work.

8.2.3.1 The Work shall be substantially complete, for occupancy and use by the OWNER, in accordance with paragraph 9.8 of the General Conditions and completed and ready for final payment in accordance with paragraph 9.10 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

8.3 Delays and Extension of Time

8.3.1.1 If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate CONTRACTOR, and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a Claim for an extension of times in accordance with the General Conditions of the Contract for Construction. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with respect to OWNER, OWNER's Consultants, ARCHITECT, ARCHITECT/ENGINEER's Consultants, and the

OWNER'S Project Representative for any delay, disruption, interference, or hindrance caused by any separate CONTRACTOR. This paragraph does not prevent recovery from OWNER, OWNER's Consultants, ARCHITECT, ARCHITECT/ENGINEER's Consultant, or OWNER'S Project Representative for activities that are their respective responsibilities.

8.3.4 **Liquidated Damages**

The CONTRACTOR recognizes that its obligations for the performance of the Work within the time provided for in this agreement and the General Conditions are of the essence of this Agreement and that the OWNER will suffer financial loss if the Work is not completed within the time specified in the Contract Documents. The parties also recognize the delays, expense and difficulties involved in determining and providing the actual loss suffered by the Owner if the Work is not completed on time.

Accordingly, instead of requiring any such determination or proof, OWNER and CONTRACTOR agree that the CONTRACTOR shall be liable for and shall pay OWNER the sums hereinafter stipulated for each and every calendar day of unexcused delay, as defined in the General Conditions, as the fair and reasonable compensation to the OWNER for such losses, which compensation shall be construed as Liquidated Damages, and not as a penalty of any kind.

8.3.4.1 The CONTRACTOR and the CONTRACTOR's surety, if any, shall be liable for and shall pay the OWNER the following sums:

.1 **Five Hundred Dollars ($ 500.00)** prior to substantial completion
.2 **Five Hundred Dollars ($ 500.00)** after substantial completion

8.3.4.1 The OWNER may deduct Liquidated Damages described herein from any unpaid amounts then or thereafter due the CONTRACTOR under the Agreement. Any Liquidated Damages not so deducted from any unpaid amounts due the CONTRACTOR shall be payable to the OWNER by the CONTRACTOR upon demand by the OWNER, together with interest from the date of the demand equal to the highest lawful rate of interest.

ARTICLE 9 – PAYMENTS AND COMPLETION

9.2 Schedule of Values

9.2.1 Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of five (**5%**) percent of the Contract Sum for that portion of the Work.

9.3 Applications for Payment

9.3.1.3 The form of Application for Payment, duly notarized, shall be a current authorized edition of AIA Document G702, Application and Certificate for Payment, supported by a current authorized edition of AIA Document G703, Continuation Sheet.

9.3.1.4 Until Substantial Completion, the OWNER shall pay ninety-five (**95%**) percent of the amount due the CONTRACTOR on account of progress payments.

9.3.2.1 Proof of insurance for items stored off site and copies of invoices are to be provided with Application for Payment requesting payment for stored materials.

9.6 Progress Payments

9.6.7.1 Sums owed to the OWNER by the CONTRACTOR may be deducted from payments otherwise due the CONTRACTOR pursuant to Article 9.

9.8 Substantial Completion

9.8.3.1 Except with the consent of the OWNER, the ARCHITECT/ENGINEER will perform no more than **one** inspection to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for any additional inspections.

9.8.5.1 The payment shall be sufficient to increase the total payments to one-hundred (**100%**) percent of the Contract Sum, less **two times** the value of any remaining items to be completed and an amount necessary to satisfy any claims, lines or judgments against the CONTRACTOR which have not been suitably discharged.

9.10 Final Completion and Final Payment

9.10.1.1 Except with the consent of the OWNER, the ARCHITECT/ENGINEER will perform no more than **one** inspection to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The OWNER shall be entitled to deduct from the Contract Sum amounts paid to the ARCHITECT/ENGINEER for any additional inspections.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

10.2 Safety of Persons and Property

10.2.4.1 When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the CONTRACTOR shall give the OWNER and ARCHITECT/ENGINEER reasonable advance notice.

10.5 Additional Safety Provisions

10.5.1 The CONTRACTOR and all of its subcontractors, vendors, and material suppliers shall comply with all the provisions of the laws of the **County of Montgomery**, the State of New York, and of the United States of America which affect municipalities and municipal contracts, and more particularly; the Town Law, the Labor Law, the General Municipal Law, the Worker's Compensation Law, the Lien Law, Personal Property Law, State Unemployment Insurance Law, federal Social Security Law, state, local and municipal health and safety laws, rules and regulations, and any and all regulations promulgated by the State of New York and United States of America including amendments and additions thereto, insofar as the same shall be applicable to any contract awarded hereunder with the same force and effect as if set forth at length herein.

10.5.2 CONTRACTOR agrees to provide all equipment necessary for the safety of its workers, subcontractors, vendors, and material suppliers as well as maintain a safe work place for the protection of workers or persons lawfully at the work site. CONTRACTOR agrees to provide all elevation-related safety equipment and to comply with all applicable OSHA regulations; New York State Labor Department rules and regulations; New York State Labor Law Sections 200, 240, and 241, and all other applicable laws, rules, regulations and codes.

10.5.3 Pursuant to New York State Labor Law Section 220-h, all laborers, workers, and mechanics employed in performance of the contract shall be certified as having successfully completed an OSHA approved course in construction safety and health of at least ten hours in duration prior to performing any work on the project.

ARTICLE 11 – INSURANCE AND BONDS

11.1 Contractor's Insurance and Bonds

11.1.1.1 The Owner's requirements regarding Insurance and Bonds are provided in AIA Document A101-2017 Exhibit A attached to the Agreement.

11.1.1.2 All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall specifically name as the additional insured, on a primary non-contributory basis, the following parties:

1. The OWNER, specifically, **Montgomery County**.
2. The ARCHITECT/ENGINEER, specifically **C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.**

11.1.1.3 Section 125 of the General Municipal Law requires that any individual applying for a building permit prove to the building department that the Contractor is in compliance with the mandatory coverage provisions of the Workers' Compensation Law before the building permit is issued. The OWNER requires proof of General Liability Insurance and Workers' Compensation Insurance before a building permit can be issued. Each CONTRACTOR must submit a Certificate of Insurance showing General Liability Insurance with the OWNER as certificate holder only. They need not be additional insured. New York State mandates that the OWNER have proof of Workers' Compensation Insurance coverage. All CONTRACTORS on must prove that they are in compliance with Section 57 of the Workers' Compensation Law (WCL) by producing ONE of the following forms:

1. submit form C-105.2(9/07) as proof of Workers' Compensation Insurance; or
2. if you are covered by the State Insurance Fund, submit U-26.3; or
3. if you participate in Workers' Compensation Self-Insurance, submit form SI-12 or form GSI-105.2; or
4. For entities with NO Employees - form CE-200 is required to be submitted for each specific application. (WC/DB-100 is no longer acceptable.)

The OWNER must be listed as certificate holder on the applicable Workers' Compensation Insurance coverage submitted. ACORD FORMS ARE NOT ACCEPTABLE PROOF OF WORKERS' COMPENSATION COVERAGE.

11.1.1.4 When CONTRACTOR delivers the executed Agreement to OWNER, CONTRACTOR shall furnish all required insurance certificates by attaching them to page 006216 in the Contracting Forms and Supplements section of the Project Manual.

11.1.2.1 The CONTRACTOR shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds may be obtained through the CONTRACTOR's usual source and the cost thereof shall be included in the Contract Sum. The amount of each bond shall be equal to **100%** of the Contract Sum.

11.1.2.2 When CONTRACTOR delivers the executed Agreement to OWNER, CONTRACTOR shall furnish all required bonds by attaching them to page 006113 in the Contracting Forms and Supplements section of the Project Manual.

11.1.4 The CONTRACTOR shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

11.1.5 For purposes of the insurance coverage and policies required by the Contract Documents, neither the CONTRACTOR's failure to produce certificates of insurance nor the OWNER's or ARCHITECT's failure to request such certificates shall constitute a waiver of the CONTRACTOR's obligation to obtain the required insurance coverages and maintain same throughout the CONTRACTOR's performance of the work or for the period of time otherwise specified herein.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

12.2 Correction of Work

12.2.2.4 Upon request by the OWNER and prior to the expiration of one year from the date of Substantial Completion, the ARCHITECT/ENGINEER will conduct and the CONTRACTOR shall attend a meeting with the OWNER to review the facility operations and performance.

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.5 Tests and Inspections

13.5.1.1 The cost of all inspections, tests, and approvals required by the Contract Documents shall be paid for by the CONTRACTOR responsible for that portion of the Work, with the exception of the Special Inspections and Testing required under the provisions of the International Building Code, which are to be paid for directly by the OWNER, as outlined under the Statement of Special Inspections prepared by the ARCHITECT/ENGINEER.

13.5.1.2 The CONTRACTOR shall be responsible for the cost of any re-inspection or re-testing of Work which fails to comply with the requirements of the Special Inspections and Testing in accordance with the Contract Documents.

ARTICLE 14 – TERMINATION OR SUSPENSION OF CONTRACT

14.1 Termination by the Contractor

14.1.3 Delete the words “costs incurred by reason of such termination.”

14.4 Termination by the Owner for Convenience

14.4.3 Delete the words “and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.”

ARTICLE 15 – CLAIMS AND DISPUTES

15.1 Claims

15.1.2 Time Limits on Claims

Delete the words “but in any case not more than 10 years after the date of Substantial Completion of the Work” in the first sentence.

15.1.5 Claims for Additional Cost

After the phrase “written notice as provided herein shall be given” add the words “and written permission received.”

15.1.6 Claims for Additional Time

15.1.6.1 After the phrase “written notice as provided herein shall be given” add the words “and written permission received.”

15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis of the Claim, the date upon which each cause for delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days’ increase in the Contract Time claimed as a consequence of each such cause of delay. The CONTRACTOR shall provide such supporting documentation as the OWNER may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

15.1.6.4 The CONTRACTOR shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the CONTRACTOR.

15.1.7 Waiver of Claims for Consequential Damages

Revise first paragraph as follows: "The Contractor waives Claims for consequential damages arising out of or relating to this Contract. This waiver includes"

15.1.7.1 Delete sub-paragraph in its entirety.

Revise last paragraph as follows: "This waiver is applicable, without limitation, to all consequential damages due to termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents."

15.1.8 Separate Contractor Claims

15.1.8.1 Should CONTRACTOR cause damage to the work or property of any separate CONTRACTOR at the Site, or should any claim arising out of CONTRACTOR's performance of the Work at the Site be made by any separate CONTRACTOR against CONTRACTOR, OWNER, OWNER's Consultants, ARCHITECT/ENGINEER, or ARCHITECT/ENGINEER's Consultants, CONTRACTOR shall promptly attempt to settle with such separate CONTRACTOR by agreement, or to otherwise resolve the dispute by arbitration or at law.

15.1.8.2 CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, OWNER's Consultants, ARCHITECT, ARCHITECT/ENGINEER's Consultants, and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees and charges of engineers, ARCHITECT's, attorneys and other professionals and court arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate CONTRACTOR against OWNER, OWNER's Consultants, ARCHITECT/ENGINEER, or the ARCHITECT/ENGINEER's Consultants, to the extent said claim is based on or arises out of CONTRACTOR's performance of the Work. Should a separate CONTRACTOR cause damage to the Work or property of CONTRACTOR or should the performance of work by any separate CONTRACTOR at the Site give rise to any other Claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, OWNER's Consultants, ARCHITECT/ENGINEER, or the ARCHITECT/ENGINEER's Consultants, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from OWNER, OWNER's Consultants, ARCHITECT/ENGINEER, or the ARCHITECT/ENGINEER's Consultants on account of any such damage or Claim.

15.2 Initial Decision

15.2.1 Delete the words "mediation of" in the second sentence.

15.2.5 Delete the words "to mediation and, if the parties fail to resolve their dispute through mediation," in the last sentence.

15.2.6 Delete paragraph in its entirety and replace with "The parties agree that any claims brought in New York State Court shall be brought in **Montgomery County**."

15.2.6.1 Delete sub-paragraph in its entirety.

15.3 Mediation

Delete section in its entirety.

15.4 Arbitration

Delete section in its entirety.

END OF DOCUMENT 007300

DOCUMENT 007301 - SUPPLEMENTARY CONDITIONS ADDITIONAL ARTICLES

These Supplementary Conditions add new topics to the Standard General Conditions of the Contract for construction (AIA Document A201-2017) and other provisions of the Contract Documents.

Articles and paragraphs herein are numbered as a continuation of the General Conditions. Some numbers in sequence may not appear because those numbered Articles and paragraphs are not applicable to this Project and have been deleted when transferring this Section from the office master document.

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16. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

16.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall read and be enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

16.2 Pursuant to General Municipal Law Section 109, no contract hereunder whether in whole or in part, shall be assigned, transferred, conveyed, sublet, or otherwise disposed of by CONTRACTOR nor shall CONTRACTOR transfer or convey his right, title, or interest therein, or his power to execute such contract, to any other person, company, or corporation unless written approval is first obtained from the OWNER, which is **MONTGOMERY COUNTY**.

17. NEW YORK STATE NONDISCRIMINATION CLAUSES

During the performance of this contract, the CONTRACTOR agrees as follows:

17.1 The CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, color or national origin. Such action shall be taken with reference but not limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

17.2 The CONTRACTOR will send to each labor union or representative of workers with which he/she has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the CONTRACTOR's agreement under clauses (17.1) through (17.8) hereinafter called "nondiscrimination clauses". If the CONTRACTOR was directed to do so by the contracting agency as part of the bid or negotiation of this contract, the CONTRACTOR shall request the labor union or representative to furnish him/her with a written statement that such labor union or representative will not discriminate because of race, creed, color or national origin and that such labor union or representative either will affirmatively cooperate within the limits of its legal and contractual authority in the implementation of the policy and provisions of these nondiscrimination clauses, or that it consents and agrees that recruitment, employment, and the terms and conditions of employment under this contract shall be in accordance with the purposes and provisions of these nondiscrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the CONTRACTOR shall promptly notify the State Commission for Human Rights of such failure or refusal.

17.3 The CONTRACTOR will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses (17.1) through (17.2) and such provisions of the State's Laws against discrimination as the State Commission for Human Rights shall determine.

17.4 The CONTRACTOR will state, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color or national origin.

17.5 The CONTRACTOR will comply with the provisions of the Executive Law, Human Rights Law, Article 15, and will furnish all information and reports deemed necessary by the State Commission for Human Rights under these nondiscrimination clauses and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General, District Commissioner of Housing and Community Renewal and the Industrial Commission for purposes of investigation to ascertain compliance with these nondiscrimination clauses of the Executive Law, Human Rights Law, Article 15.

17.6 This Contract may be forthwith canceled, terminated or suspended, in whole or in part by the contracting agency upon the basis of a finding made by the State Commission for Human Rights that the CONTRACTOR has not complied with these nondiscrimination clauses, and the CONTRACTOR may be declared ineligible for future contracts made by or on behalf of the State or a public authority or agency of the State or housing authority, or an urban renewal agency, or contract requiring the approval of the Commissioner of Housing and Community Renewal, until he/she has satisfied the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these nondiscrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been afforded him/her to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law.

17.7 If this contract is canceled or terminated, in addition to other rights of the contracting agency provided in this Contract upon its breach by the CONTRACTOR, the CONTRACTOR will hold the contracting agency harmless against any additional expenses or costs incurred by the contracting agency in completing the work or in purchasing the services, materials, equipment or supplies contemplated by the contract, and the contracting agency may withhold payments from the CONTRACTOR in an amount sufficient for this purpose and recourse may be had against the surety on the performance bond if necessary.

17.8 The CONTRACTOR will include the provisions of clauses (17.1) through (17.7) in every subcontractor purchase order altered only to reflect the proper identity of the parties in such manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The CONTRACTOR will take such actions in enforcing such provisions of such subcontractor purchase order as the contracting agency may direct, including sanctions or remedies for non-compliance. If the CONTRACTOR becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency the CONTRACTOR shall promptly so notify the Attorney General, requesting him to intervene and to protect the interests of the State of New York.

18. NEW YORK STATE NON-COLLUSIVE BIDDING CERTIFICATION

In addition to the other provisions herein contained to be done or performed by the CONTRACTOR as part of this Contract, the said CONTRACTOR certifies, pursuant to the provisions of Section 103-d of the New York State General Municipal Law that:

18.1 By submission of this bid, each bidder and such person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his/her knowledge and belief:

A. The prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any competitor; and

B. unless otherwise required by law, the prices which have been quoted in this bid have not knowingly be disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

C. no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

18.2 A bid shall not be considered for award nor shall any award be made where A, B, and C, above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where A and C above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, has determined that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (1) has published price lists, rates, or tariffs covering items being procured, (2) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (3) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph (A).

Any bid hereafter made to any political subdivision of state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision (A) of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

19. PROTECTION OF EXISTING FACILITIES

19.1 The CONTRACTOR shall conduct his/her operations and take all special temporary and permanent precautions necessary to insure a stable and secure job, and as may be required by the contract documents, the ARCHITECT/ENGINEER, the OWNER, and the public utilities, to protect and sustain in normal service all existing structures, equipment, utility lines, roadways, and subsurface, submerged and overhead facilities which are to remain in place and undisturbed by his/her operations under this contract completely at his/her own expense, unless otherwise provided for in the contract documents. The CONTRACTOR shall be held accountable for damage resulting from failure to exercise proper judgment in the progress of the work.

19.2 When power poles, light poles, pipes, or portions of any other existing structures, or utilities, either visible or underground, constitute an unavoidable interference to his/her operations, the CONTRACTOR shall consult with the owner of such facility prior to performing any work at or near the same. If permitted by the owner of the facility, the CONTRACTOR shall relocate or temporarily remove, and later restore, the interfering portion of the facility, as directed by said owner and the project OWNER, through the ARCHITECT/ENGINEER. If the owner of the facility so elects, he will perform such work with his own forces. Under either arrangement, the work shall be done at the CONTRACTOR's expense unless stated otherwise in the contract documents.

19.3 The CONTRACTOR shall immediately notify the ARCHITECT/ENGINEER and the owner of any facilities, which are disturbed, damaged or injured as a result of the CONTRACTOR's operations. The CONTRACTOR shall consult with the owner of such facility as to the proper method of replacing, repairing, or restoring the affected facilities to the conditions, which existed prior to the CONTRACTOR's operations. If permitted by the owner of the facility, the CONTRACTOR shall, at his/her own expense, replace, repair, or restore the affected facilities to their original condition, to the satisfaction of said owner.

19.4 In the event that the owner of the facility desires to use his/her own forces to perform the replacement, repairing or restoring of affected facilities, the CONTRACTOR shall reimburse the owner of said facilities for such expenses as said owner may accrue in performing such work. The CONTRACTOR shall not be entitled to receive additional compensation under this contract for such work.

19.5 Upon learning of the existence and location of any utility omitted from or shown incorrectly on the contract drawings the CONTRACTOR shall notify the utility owner and the ARCHITECT/ENGINEER and assumes full responsibility for that utility's protection or relocation as described above.

20. MATERIALS FOUND AT THE SITE

20.1 All timber, fences, buildings, stone, sand, utility lines, pipes, and any other appurtenances, materials, or articles of value found on lands or in excavations within the contract limits shall be brought to the attention of the ARCHITECT/ENGINEER.

20.2 If such items are found in or upon lands of the OWNER, they shall remain the property of the OWNER. Such materials may, therefore be used by the CONTRACTOR in the work at the discretion of the ARCHITECT/ENGINEER or the OWNER, for purposes for which they are acceptable. If not otherwise claimed by the OWNER or his/her representatives, such items shall be considered waste and shall be disposed of by the CONTRACTOR as stipulated hereafter.

20.3 If such items are found in or upon lands or easements being used in the project but being owned by parties other than the OWNER, they shall remain the property of such other owners. If claimed by these owners, the items shall be turned over to these owners at the site of the work as the ARCHITECT/ENGINEER directs. If such items are not claimed by these owners, they may similarly be used in the work as stipulated in the preceding paragraph, or be considered waste and be disposed of by the CONTRACTOR as stipulated hereafter.

20.4 Disposal of waste materials shall be the CONTRACTOR's responsibility as an integral part of the contract and shall be done without special payment from the OWNER. The decision as to whether disposal takes place inside or outside of the project limits shall be subject to control by the ARCHITECT/ENGINEER. If disposal takes place within the project limits, it shall be done by the CONTRACTOR subject to the direction and satisfaction of the ARCHITECT/ENGINEER. Waste material shall not be sold to parties within the project limits. If disposal takes place outside the project limits, it shall be done by the CONTRACTOR exclusively at his discretion and be solely his/her responsibility. The CONTRACTOR will be required to show the ARCHITECT/ENGINEER how he/she plans to dispose of the waste (i.e., unsuitable backfill, rock, etc.) in an environmentally acceptable manner. The ARCHITECT/ENGINEER will require copies of release forms from property owners who have agreed with CONTRACTOR to accept spoil materials.

21. OPERATION OF VALVES AND HYDRANTS

21.1 Operation of all valves and hydrants under pressure shall be done by representatives of the Water Department or owner of the water utility of the locality where the work is performed, or under their direct supervision and with their approval.

21.2 The CONTRACTOR shall give sufficient notice to the ARCHITECT/ENGINEER when and where he desires operation of valves and hydrants so that the Water District representatives can be contacted and be present. The CONTRACTOR shall notify customers served by the main in adequate time before the closing of a section to permit them to draw water for their use while the main is shut down.

22. USE AND PROTECTION OF WATERS IN NEW YORK STATE

22.1 The CONTRACTOR is advised that any work or operations which in any way disturb or affect the streambed or banks of any stream, wetlands or other waters of the United States which are classified or regulated by the New York State Department of Environmental Conservation, the United States Army Corps of Engineers, or other local agency falls under the control and supervision of the Department of Environmental Conservation, the United States Army Corps of Engineers, and other local agency. In compliance with the law, the CONTRACTOR will be required to contact the Local Permit Agent of NYSDEC, the USACOE, and/or other local agency and advise him/her of his/her intent to impact said stream, the United States Army Corps of Engineers, and other local agency. They will then advise the CONTRACTOR of the procedures and conditions to be followed, if any, in making the stream crossings and/or working on the banks of the stream.

23. SANITARY SEWER AND WATER MAIN SEPARATION

23.1 Horizontal Separation:
Sewer pipe and water mains shall be separated by a minimum 10 foot horizontal distance. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten foot separation, the appropriate reviewing agency may allow deviation on a case-by-case basis, if supported by data from the

design ARCHITECT/ENGINEER. Such deviation may allow installation at less then the ten foot horizontal separation provided that the water main is in a separate trench or on an undisturbed earth self located on one side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer.

23.2 Crossings:
At crossings of sewers and water mains, a minimum vertical distance of 18 inches shall be provided between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. At crossings of sewers and water mains, the pipe undermined during construction shall receive adequate structural support to prevent damage.

23.3 Special Conditions:
When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water pipe, and shall be pressure tested to assure water-tightness prior to backfilling.

24. BLASTING

24.1 Not Applicable.

END OF DOCUMENT 007301

DOCUMENT 007343 - WAGE RATE REQUIREMENTS

NOTICE TO BIDDERS

1. New York State minimum wage rate schedules are bound at the end of these Supplementary Conditions.

2. The labor on this contract shall be performed in all respects in full accordance with the Labor Law of the State of New York. In accordance with Section 220, Subdivision 3, and Section 220-D, of the Labor Law, the Industrial Commissioner has designated as the minimum hourly rates to be paid to employees on this work the rates shown on the attached schedules which shall be posted in a prominent and convenient place for the inspection of the Contractor's employees. Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, provides, among other things, that it shall be the duty of the fiscal officer to make a determination of the schedule of wages and supplements to be paid to all laborers, workmen and mechanics employed on public works projects. The amount of supplements listed on the enclosed schedule does not necessarily include all types of prevailing supplements.

3. The Contractor shall make provision for disability benefits, workmen's compensation, unemployment insurance and social security, as required by law.

4. Every Contractor and Subcontractor shall submit to the Contracting Agency, which is the County, within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true in accordance with the general provisions of laws Covering Workers on Public Works Contracts.

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END OF DOCUMENT 007343

EXCEPT FOR PREVAILING WAGE SCHEDULE WHICH FOLLOWS
007343.1

Montgomery County

Schedule Year	2021 through 2022
Date Requested	10/12/2021
PRC#	2021010630

Location	Montgomery County
Project ID#	20.0651
Project Type	Alterations to existing building for relocation of County offices.

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2021 through June 2022. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "Request for a dispensation to work overtime" form (PW30) and "4 Day / 10 Hour Work Schedule" form (PW 30.1).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemperaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid

or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment.Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Montgomery County

Richard Campagnola, Principal Architect
50 Century Hill Drive
Latham NY 12110

Schedule Year 2021 through 2022
Date Requested 10/12/2021
PRC# 2021010630

Location Montgomery County
Project ID# 20.0651
Project Type Alterations to existing building for relocation of County offices.

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:
- [ ] (01) General Construction
- [ ] (02) Heating/Ventilation
- [ ] (03) Electrical
- [ ] (04) Plumbing
- [ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov. https://labor.ny.gov/formsdocs/ui/IA999.pdf
If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.ny.gov* or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(12.20)

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

NEW YORK STATE OF OPPORTUNITY. Department of Labor

Required Notice under Article 25-B of the Labor Law

Attention All Employees, Contractors and Subcontractors: You are Covered by the Construction Industry Fair Play Act

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor**, you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

Penalties for paying workers off the books or improperly treating employees as independent contractors:

• **Civil Penalty**	First offense: Up to $2,500 per employee Subsequent offense(s): Up to $5,000 per employee
• **Criminal Penalty**	First offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing public work for up to one year. Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a $50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)

New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: www.labor.ny.gov

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is $250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training “prior to the performing any work on the project.”

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.)*
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is $3 million in Bronx, Kings, New York, Queens and, Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirement s on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Montgomery County General Construction

Boilermaker — 10/01/2021

JOB DESCRIPTION Boilermaker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

WAGES
Per hour

	07/01/2021
Boilermaker	$ 38.59

SUPPLEMENTAL BENEFITS
Per hour

	07/01/2021
Journeyperson	$ 25.10 + 1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the day observed by the State or Nation shall be observed, and when Christmas Day and New Year's fall on Saturday, Friday will be observed as the holiday.

REGISTERED APPRENTICES
Wages per hour
(1/2) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
65%	65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits per hour

07/01/2021

1st	2nd	3rd	4th	5th	6th	7th	8th
18.79 +1.24*	18.79 +1.24*	19.71 +1.24*	20.61 +1.24*	21.50 +1.24*	22.40 +1.24*	23.31 +1.24*	24.20 +1.24*

* This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

1-197

Carpenter - Building — 10/01/2021

JOB DESCRIPTION Carpenter - Building **DISTRICT** 2

ENTIRE COUNTIES
Albany, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie

WAGES

Per hour:	07/01/2021	07/01/2022 Additional	07/01/2023 Additional	07/01/2024 Additional
Carpenter	$ 32.73	$ 1.40	$ 1.25	$ 1.25
Floor Coverer	32.73	1.40	1.25	1.25
Carpet Layer	32.73	1.40	1.25	1.25
Dry-Wall	32.73	1.40	1.25	1.25
Diver-Wet Day	61.25	0.00	0.00	0.00
Diver-Dry Day	33.73	1.40	1.25	1.25
Diver Tender	33.73	1.40	1.25	1.25

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (per hour worked):
- Pile Drivers/Dock Builders shall receive $0.25 per hour over the journeyman's rate of pay when performing piledriving/dock building work.
- Certified welders shall receive $1.00 per hour over the journeyman's rate of pay when the employee is required to be certified and performs DOT or ABS specified welding work
- When an employee performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require employees to be furnished and use or wear required forms of personal protection, then the employee shall receive his regular hourly rate plus $1.50 per hour.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
  0' to 80' no additional fee
  81' to 100' additional $.50 per foot
  101' to 150' additional $0.75 per foot
  151' and deeper additional $1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
  0' to 50' no additional fee
  51' to 100' additional $.75 per foot
  101' and deeper additional $1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 23.34

OVERTIME PAY
See (B, E, *E2, Q) on OVERTIME PAGE
* Note - Saturday is also payable at straight time if the employee misses work, except where a doctor's or hospital verification of illness is produced Monday through Friday when work was available to the employee.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday. If Christmas falls on a Saturday, it shall be observed on the prior Friday.

REGISTERED APPRENTICES
ALL APPRENTICES indentured prior to 01/01/2016
Wages per hour (One year terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

$ 12.06	$ 12.06	$ 14.66	$ 14.66

CARPENTER APPRENTICES indentured after 01/01/2016
Wages per hour (1300 hour terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th	5th
55%	60%	65%	70%	80%

Supplemental Benefits per hour:

$ 12.06	$ 12.06	$ 14.66	$ 14.66	$ 14.66

PILEDRIVER/DOCK BUILDER APPRENTICES indentured after 01/01/2016
Wages per hour (1300 hour terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th
55%*	60%*	70%*	80%*

*Pile Driver/Dock Builder apprentices shall receive an additional $0.25 per hour worked when performing piledriving/dock building work.
Supplemental Benefits per hour:

$ 12.06	$ 12.06	$ 14.66	$ 14.66

LINOLEUM, RESILIENT TILE, AND CARPET LAYER APPRENTICES indentured after 01/01/2016
Wages per hour (1300 hour terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

$ 12.06	$ 12.06	$ 14.66	$ 14.66

ADDITIONAL AMOUNTS PAID PER HOUR WORKED TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED:
- Certified welders shall receive $1.00 per hour over the apprentices rate of pay when the apprentice is required to be certified and performs DOT or ABS specified welding work
- When an apprentice performs work within a contaminated area on a State and/or Federally designated hazardous waste site, and where relevant State and/or Federal regulations require the apprentice to be furnished and use or wear required forms of personal protection, then the apprentice shall receive his regular hourly rate plus $1.50 per hour.

2-291B-Alb

Carpenter - Building / Heavy&Highway 10/01/2021

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

PARTIAL COUNTIES
Orange: The area lying on Northern side of Orange County demarcated by a line drawn from the Bear Mountain Bridge continuing west to the Bear Mountain Circle, continue North on 9W to the town of Cornwall where County Road 107 (also known as Quaker Rd) crosses under 9W, then east on County Road 107 to Route 32, then north on Route 32 to Orrs Mills Rd, then west on Orrs Mills Rd to Route 94, continue west and south on Route 94 to the Town of Chester, to the intersection of Kings Highway, continue south on Kings Highway to Bellvale Rd, west on Bellvale Rd to Bellvale Lakes Rd, then south on Bellvale Lakes Rd to Kain Rd, southeast on Kain Rd to Route 17A, then north and southeast along Route 17A to Route 210, then follow Route 210 to NJ Border.

WAGES
Wages per hour: 07/01/2021

Carpenter - ONLY for Artificial Turf/Synthetic Sport Surface	$ 32.08

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 24.20

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE
Notes:
When a holiday falls upon a Saturday, it shall be observed on the preceding Friday. Whan a holiday falls upon a Sunday, it shall be observed on the following Monday.
An employee taking an unexcused day off the regularly scheduled day before or after a paid Holiday shall not receive Holiday pay.

REGISTERED APPRENTICES
Wages per hour:

One year terms at the following percentage of Journeyman's wage:

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

1st year term	$ 12.15
2nd year term	12.15
3rd year term	14.80
4th year term	14.80

2-42AtSS

Carpenter - Heavy&Highway 10/01/2021

JOB DESCRIPTION Carpenter - Heavy&Highway **DISTRICT** 2

ENTIRE COUNTIES
Albany, Clinton, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour 07/01/2021

Carpenter	$ 34.52
Piledriver	34.52
Diver-Wet Day	59.52
Diver-Dry Day	35.52
Diver-Tender	35.52

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (per hour worked):
- When project owner mandates a single irregular work shift, the employee will receive an additional $2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.00 per hour.
- Certified welders when required to perform welding work will receive an additional $1.50 per hour.

ADDITIONAL NOTES PERTAINING TO DIVERS/TENDERS:
- Divers and Tenders shall receive one and one half (1 1/2) times their regular diver and tender rate of pay for Effluent and Slurry diving.
- Divers and tenders being paid at the specified rate for Effluent and Slurry diving shall have all overtime rates based on the specified rate plus the appropriate overtime rates (one and one half or two times the specified rate for Slurry and Effluent divers and tenders).
- The pilot of an ADS or submersible will receive one and one-half (1 1/2) times the Diver-Wet Day Rate for time submerged.
- All crew members aboard a submersible shall receive the Diver-Wet Day rate.
- Depth pay for Divers based upon deepest depth on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51'to 100' additional $.50 per foot
  - 101'to 150' additional $0.75 per foot
  - 151'and deeper additional $1.25 per foot
- Penetration pay for Divers based upon deepest penetration on the day of the dive (per diem payment):
  - 0' to 50' no additional fee
  - 51' to 100' additional $.75 per foot
  - 101' and deeper additional $1.00 per foot
- Diver rates applies to all hours worked on dive day.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Friday, provided the project duration is more than forty (40) hours.
NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 23.80

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
In the event a Holiday falls on a Saturday, the Friday before will be observed as a Holiday. If a Holiday falls on a Sunday, then Monday will be observed as a Holiday. Employee must work scheduled work day before and after the Holiday.

REGISTERED APPRENTICES
ALL APPRENTICES indentured prior to 01/01/2016
Wages per hour (One year terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

$ 12.02	$ 12.02	$ 14.62	$ 14.62

CAPRENTER APPRENTICES indentured after 01/01/2016
Wages per hour (1300 hour terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th	5th
55%	60%	65%	70%	80%

Supplemental Benefits per hour:

$ 12.02	$ 12.02	$ 14.62	$ 14.62	$ 14.62

PILEDRIVER/DOCKBUILDER APPRENTICES indentured after 01/01/2016
Wages per hour (1300 hour terms at the following percentage of journeyman's base wage):

1st	2nd	3rd	4th
55%	60%	70%	80%

Supplemental Benefits per hour:

$ 12.02	$ 12.02	$ 14.62	$ 14.62

NOTE ADDITIONAL AMOUNTS PAID PER HOUR WORKED TO APPRENTICES FOR SPECIFIC TYPES OF WORK PERFORMED:
- When project owner mandates a single irregular work shift, the employee will receive an additional $2.00 per hour. A single irregular work shift can start any time from 5:00 p.m. to 1:00 a.m.
- State or Federal designated hazardous site, requiring protective gear shall be an additional $2.00 per hour.
- Certified welders when required to perform welding work will receive an additional $1.50 per hour.

2-291HH-Alb

Electrician 10/01/2021

JOB DESCRIPTION Electrician **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Fulton, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Greene: Portion of the County North of a line following the South limits of the City of Catskill in a westerly direction from the Hudson River to State Highway 23A. Then continuing on 23A to the road following the Little West Kill and continuing along this road to Delaware County.
Otsego: Only the Towns of Decatur and Worchester

WAGES
Per hour

	07/01/2021
Electrician	$ 42.70
Audio/Sound	42.70
Video	42.70
Tele-Data	42.70
Solar/ Photovoltaic	42.70

Notes: An additional 5% above rate for work over 30' above floor and requires use of a safety harness when working on tooth picks, structural steel, temporary platforms, swing scaffolds & boatswain chairs. All OSHA approved lifts are excluded.
An additional 10% above rate on towers & smoke stacks over 100' high.
An additional 20% above rate in shafts over 25' deep or tunnels over 50' long that are under construction.
An additional 5% above rate when Journeymen are required to work as Lead(Pb) cable splicers.
An additional 10% above rate when Journeymen Welders are required to have ASME verification.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 27.42
	+3% of wage

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
* DOUBLE TIME AFTER 10 HOURS ON SATURDAY

For Projects Bid on or Prior to 05/31/2019
NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SHIFTS OF AT LEAST A FIVE (5) DAY DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1st Shift	8:00 AM to 4:30 PM	REGULAR RATE
2nd Shift	4:30 PM to 1:00 AM	REGULAR RATE PLUS 10%
3rd Shift	12:30 AM to 9:00 AM	REGULAR RATE PLUS 15%

For Projects Bid on or After 06/01/2019

1st Shift	8:00 AM to 4:30 PM	REGULAR RATE
2nd Shift	4:30 PM to 1:00 AM	REGULAR RATE PLUS 17.3%
3rd Shift	12:30 AM to 9:00 AM	REGULAR RATE PLUS 31.4%

For Projects Bid on or After 09/01/2019
NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SINGLE IRREGULAR SHIFTS OF AT LEAST A FIVE (5) DAY DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1st Shift	8:00 AM to 4:30 PM	REGULAR RATE
2nd Shift	4:30 PM to 1:00 AM	REGULAR RATE PLUS 17.3%
3rd Shift	12:30 AM to 9:00 AM	REGULAR RATE PLUS 31.4%

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If the holiday falls on Saturday, it shall be celebrated on Friday. If the holiday falls on Sunday, it shall be celebrated on Monday.

REGISTERED APPRENTICES
Wages per hour

Terms at the following percentage of Journeyman's wage.

0-6mo	6-12mo	2nd yr	3rd yr	4th yr	5th yr
40%	45%	50%	60%	70%	80%

Notes: An additional 5% above rate for work over 30' above floor and requires use of a safety harness when working on tooth picks, structural steel, temporary platforms, swing scaffolds & boatswain chairs. All OSHA approved lifts are excluded.
An additional 10% above rate on towers & smoke stacks over 100' high.
An additional 20% above rate in shafts over 25' deep or tunnels over 50' long that are under construction.

Supplemental Benefits per hour worked

Apprentices indentured on or before 12/31/2018

0-12 month term	$ 13.08*
2 - 5th year term	27.42*

*Plus additional 3% of wage

Apprentices indentured on or after 1/1/2019

0-12 Month Term	$ 13.08*
2nd Year Term	21.70*
3rd Year Term	22.84*
4 - 5th Year Term	27.42*

*Plus additional 3% of wage

1-236

Elevator Constructor — 10/01/2021

JOB DESCRIPTION Elevator Constructor **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Essex, Fulton, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Madison: Madison Only the towns of: Brookfield, Hamilton, Lincoln, Madison, Smithfield, Stockbridge and the City of Oneida
Oneida: Entire county except the towns of: Camden, Florence, and Vienna.

WAGES
Per hour

	07/01/2021	01/01/2022
Mechanic	$ 49.10	$ 50.78
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

Four (4), ten (10) hour days may be worked for New Construction and Modernization Work at straight time during a week, Monday thru Thursday or Tuesday thru Friday.

***Four (4), ten (10) hour days are not permitted for Contract Work/Repair Work

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

	07/01/2021	01/01/2022
Journeyperson/Helper	$ 35.825*	$ 36.885*

(*)Plus 6% of hourly rate, if less than 5 years of service. Plus 8% of hourly rate, if more than 5 years of service.

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE
Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
Wages per hour:

0-6 mo*	6-12 mo	2nd yr	3rd yr	4th yr
50%	55 %	65 %	70 %	80 %

(*)Plus 6% of the hourly rate, no additional supplemental benefits.

Supplemental Benefits - per hour worked:

Same as Journeyperson/Helper

1-35

Glazier 10/01/2021

JOB DESCRIPTION Glazier **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2021	5/01/2022 Additional
Glazier Base Wage	$ 30.85	$ 1.75
	+ additional $3.60 per hour for all hours worked	
High Work Base Wage*	33.15	1.50
	+ additional $3.60 per hour for all hours worked	

(*)When working on Swing Stage or Lift 100 feet or more in height, measured from the ground level up.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. NOTE - In order to use the 4 Day/10 Hour Work schedule, as your normal schedule, you must submit an Employer Registration for Use of 4 Day/10 Hour Work Schedule, form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 20.46
Journeyman High Work	26.46

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE
Premium is applied to the respective base wage only.

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SHIFT WORK OR SINGLE IRREGULAR SHIFTS STARTING BETWEEN THE HOURS LISTED BELOW:

4:00pm to 6:30am: ADDITIONAL 12.5% TO APPLICABLE WAGE RATE AND SUPPLEMENTAL BENEFIT

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If any of the holidays are designated by federal law to be celebrated on a day other than that on which they regularly fall, then the holiday shall be celebrated on the day set by said federal law as if the day on which the holiday is celebrated was actually the holiday date.

REGISTERED APPRENTICES
Wages per hour

Apprentice Glazier 1500 hr. terms at the following percentage of Journeymans base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%

+ additional $3.60 per hour for all hours worked for all terms

Apprentice Glazier Hi-Work 1500 hr. terms at the following percentage of Journeymans Hi-Work base wage.

1st	2nd	3rd	4th
50%	65%	75%	90%

+ additional $3.60 per hour for all hours worked for all terms

Supplemental Benefits per hour worked

Apprentice	
1st term	$ 16.79
2nd-4th term	20.46
Apprentice High Work	
1st term	20.09
2nd-4th term	26.46

1-201

Insulator - Heat & Frost — 10/01/2021

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Delaware, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Sullivan, Ulster, Warren, Washington

WAGES

Wages per hour	07/01/2021
Asbestos Worker*	$ 37.12
Insulator*	37.12
Firestopping Worker*	31.55

(*)On Mechanical Systems only.

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

SUPPLEMENTAL BENEFITS
Per hour

Journeyperson	$ 23.20

OVERTIME PAY
See (*B1, **Q) on OVERTIME PAGE
*B1=Double time begins after 10 hours on Saturday
**Q=Triple time on Labor Day if worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When a holiday falls on Sunday the following Monday shall be observed as the holiday.

REGISTERED APPRENTICES
Wages per hour

one year terms at the following percentage of Journeyperson's wage.

1st	2nd	3rd	4th
60 %	70 %	80 %	90 %

Supplemental Benefits per hour worked:

Apprentices	$ 23.20

1-40

Ironworker — 10/01/2021

JOB DESCRIPTION Ironworker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Delaware, Essex, Greene, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Fulton: Only the Townships of Broadalbin, Mayfield, Northampton, Perth, Bleecker and Johnstown.

Hamilton: Only the Townships of Hope, Benson and Wells.
Montgomery: Only the Townships of Florida, Amsterdam, Charleston, Glen, Mohawk and Root.
Otsego: Only the Towns of Unadilla, Butternuts, Morris, Otego, Oneonta, Laurens, Millford, Maryland and Worchester.

WAGES

Wages Per hour	07/01/2021
Ornamental	$ 32.65
Reinforcing	32.65
Rodman	32.65
Structural & Precast	32.65
Mover/Rigger	32.65
Fence Erector	32.65
Stone Derrickman	32.65
Sheeter	32.90
Curtain Wall Installer	32.65
Metal Window Installer	32.65

SUPPLEMENTAL BENEFITS
Per hour

JOURNEYPERSON	$ 30.49

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTWORK:

1st Shift	6:00 AM to 2:00 PM	REGULAR RATE
2nd Shift	2:00 PM to 7:00 PM	REGULAR RATE PLUS 10%
3rd Shift	7:00 PM to 12:00 AM	REGULAR RATE PLUS 15%

THE FOLLOWING RATE WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SINGLE IRREGULAR SHIFTS:

Shift Starting	4:30 PM to 12:00 AM	REGULAR RATE PLUS 10%

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour
ONE YEAR TERMS AT THE FOLLOWING WAGE RATES:

	07/01/2021
1st year	$ 19.50
2nd year	21.50
3rd year	23.50
4th year	25.20

Supplemental Benefits per hour worked

1st year	$ 11.50
2nd year	22.92
3rd year	24.54
4th year	26.18

1-12

Ironworker — 10/01/2021

JOB DESCRIPTION Ironworker **DISTRICT** 7

ENTIRE COUNTIES
Franklin, Herkimer, Lewis, Oneida, St. Lawrence

PARTIAL COUNTIES
Chenango: Only the Townships of Columbus, New Berlin, North Norwich, Plymouth, Sherburne and Smyrna.
Fulton: Only the Townships of Caroga, Ephratah, Oppenheim, Stratford.
Hamilton: Only the Townships of Arietta, Indian Lake, Inlet, Lake Pleasant, Long Lake and Morehouse.
Jefferson: Only the Townships of Antwerp, Champion, Philadelphia and Wilna.

Madison: Only the Townships of Brookfield, Eaton, Hamilton, Lebanon, Madison, Oneida and Stockbridge.
Montgomery: Only the Townships of Canajoharie, Minden, Palatine and St. Johnsville.
Otsego: Only the Townships of Burlington, Cherry Valley, Decatur, Edmeston, Exeter, Hartwick, Middlefield, New Lisbon, Otsego, Pittsfield, Plainfield, Richfield, Roseboom, Springfield and Westford, and Village of Cooperstown.

WAGES
Per hour:

	07/01/2021
Structural/Reinforcing	$ 30.50
Mach. Mover/Ornamental	30.50
Stone Derrickman	30.50
Chain Link Fence	30.50
Sheeter Ironworker	30.50
Pre-Engineered Building	30.50
Window Erector	30.50
Precast Erector	30.50
Welder	30.50

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 29.72

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
NOTE: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
WAGES per hour: 1500 hour terms at the following wage.

1-1500hrs	$ 19.50
1501-3000hrs	21.50
3001-4500hrs	23.50
4501-6000hrs	25.50

SUPPLEMENTAL BENEFITS per hour:

1-1500hrs	$ 12.53
1501-3000hrs	20.34
3001-4500hrs	24.45
4501-6000hrs	22.57

7-440

Laborer - Building — 10/01/2021

JOB DESCRIPTION Laborer - Building **DISTRICT** 1

ENTIRE COUNTIES
Schenectady, Schoharie

PARTIAL COUNTIES
Fulton: Only the Townships of Bleeker, Mayfield, Northampton, Johnstown,Broadalbin and Perth.
Montgomery: Only the Townships of Mohawk, Glen, Charleston, Amsterdam, and Florida.
Saratoga: Only the Townships of Day, Hadley, Edinburg, Corinth, Moreau,South Glens Falls, Providence, Greenfield, Wilton, Galway, Northumberland, Milton, Saratoga Springs, Charlton, Ballston, Malta and Clifton Park.

WAGES
Per hour

	07/01/2021
Group #1:	
All Classifications except as noted in Groups 2 & 3	$ 32.79
Group #2:	
Blaster, Drilling equipment only where a separate air compressor unit supplies power, Metal formsetter (sidewalk),	

Well pointing & Laser operator	$ 33.29
Group #3: Handling of Asbestos or Toxic Materials	$ 34.14

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 22.61

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour
1000 Hour terms at the following percentage of Journeyman's basic hourly wage.

1st	2nd	3rd	4th
65 %	70 %	80 %	80 %

Supplemental Benefits per hour worked

	07/01/2021
Apprentices	$ 22.61

Laborer - Building — 10/01/2021

JOB DESCRIPTION Laborer - Building **DISTRICT** 1

ENTIRE COUNTIES
Hamilton, Herkimer, Madison, Oneida

PARTIAL COUNTIES
Fulton: Only the Townships of Stratford, Oppenheim, Caroga and Ephratah
Montgomery: Only the Townships of Minden, St. Johnsville, Canajoharie, Palatine and Root

WAGES
GROUP #1: Basic
GROUP #2: Pipe Layer, Mortar Mixer, Walk behind Mortar Buggie and Power Lift
GROUP #3: Wagon Drill(Where separate air compressor unit supplies power.)
GROUP #4: Blaster, Formsetter, Riding Mortar Buggy
GROUP #5: Hazardous Waste Removal
GROUP #6: Asbestos and Lead Removal

WAGES per hour:	07/01/2021
Building Laborer:	
Group # 1	$ 24.95
Group # 2	25.10
Group # 3	25.35
Group # 4	25.45
Group # 5	26.45
Group # 6	26.45

SUPPLEMENTAL BENEFITS
Per hour:

	07/01/2021
All groups	$ 24.39

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour
1000 Hour terms at the following percentage of Journeyperson's basic hourly wage.

1st	2nd	3rd	4th
65 %	70 %	80 %	80 %

Supplemental Benefits per hour worked

	07/01/2021
Apprentices	$ 24.39

1-190z2B

Laborer - Heavy&Highway **10/01/2021**

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Schenectady, Schoharie

PARTIAL COUNTIES
Fulton: Only the Townships of Bleeker, Mayfield, Northampton, Johnstown,Broadalbin and Perth.
Montgomery: Only the Townships of Mohawk, Glen, Charleston, Amsterdam, and Florida.
Saratoga: Only the Townships of Day, Hadley, Edinburg, Corinth, Moreau,South Glens Falls, Providence, Greenfield, Wilton, Galaway, Northumberland, Milton, Saratoga Springs, Charlton, Ballston, Malta and Clifton Park

WAGES
GROUP # A:
Basic, Drill Helper, Flagman, Outboard and Hand Boats.

GROUP # B:
Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer,Pavement Breaker, Handlers of Steelmesh, Small Generators for Laborers, Tools Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump Operators(1-1/2" and Single Diaphragm) Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool Operators, Wrecking Laborer.

GROUP # C:
Drilling Equipment Only Where a Separate Air Compressor Unit Supplies Power, Acetylene Torch Operators, Asphalt Paver/Raker and Powderman.

GROUP # D:
Blasters, Metal Form Setters (sidewalk), Stone or Granite Curb Setters.

GROUP # E:
Employees performing hazardous waste removal, lead abatement and removal, or asbestos abatement and removal on a State and/or Federally designated waste site & where relevant State or Federal regulations require employees to use or wear forms of personal protection.

WAGES per hour	07/01/2021
Group # A	$ 34.60
Group # B	34.80
Group # C	35.00
Group # D	35.20
Group # E	36.60

All employees who work a single irregular work day that starts from 5:00 pm to 1:00 am on a governmental mandated night shift shall be paid an additional $2.50 per hour.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 25.74

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6) on HOLIDAY PAGE
Overtime:	See (5, 6) on HOLIDAY PAGE

Note: If the holiday falls on Sunday, it will be celebrated on Monday. If the Holiday falls on a Saturday employer can choose to celebrate Saturday or give Friday off with pay.

REGISTERED APPRENTICES
Wages per hour

1000 HOUR TERMS AT THE FOLLOWING PERCENTAGE OF JOURNEYMAN'S BASE WAGE

1ST	2ND	3RD	4TH
65 %	70 %	80 %	80 %

Supplemental Benefits per hour worked

	07/01/2021
Apprentices	$ 25.74

1-157h/h

Laborer - Heavy&Highway 10/01/2021

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Hamilton, Herkimer, Madison, Oneida

PARTIAL COUNTIES
Fulton: Only Townships of Stratford, Oppenheim, Caroga and Ephratah
Montgomery: Only Townships of Minden, St. Johnsville, Canajoharie, Palatine and Root.

WAGES
GROUP # A: Basic, Drill Helper, Flagman, Outboard and Hand Boats.

GROUP # B: Bull Float, Chain Saw, Concrete Aggregate Bin, Concrete Bootmen, Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer, Pavement Breaker,Handlers of all SteelMash, Small Generators for Laborers Tools, Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers, Tamper, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump Operators(1-1/2" and Single Diaphragm), Nozzle (Asphalt, Gunite, Seeding, and Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit, Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool Operators, Wrecking Laborer.

GROUP # C: Rock or Drilling Machine Operators (only where a separate air compressor unit supplies power), Acetylene Torch Operators, Asphalt Raker and Powderman.

GROUP # D: Blasters, Form Setters (prefab curb radius), Stone or Granite Curb Setters.

GROUP # E: Employees performing hazardous waste removal, lead abatement and removal, or asbestos abatement and removal on a State and/or Federally designated waste site & where relevant State or Federal regulations require employees to use or wear forms of personal protection.

Per hour:	07/01/2021
Heavy/Highway Laborer:	
GROUP # A	$ 33.15
GROUP # B	33.35
GROUP # C	33.55
GROUP # D	33.75
GROUP # E	35.15

All employees who work a single irregular work day that starts from 5:00 pm to 1:00 am on a governmental mandated night shift shall be paid an additional $2.50 per hour.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the "4 Day/10 Hour Work schedule", as your normal schedule, you must submit an "Employer Registration for Use of 4 Day/10 Hour Work Schedule," form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour: $ 27.19

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

Note: If the holiday falls on Sunday, it will be celebrated on Monday. If the Holiday falls on a Saturday employer can choose to celebrate Saturday or give Friday off with pay.

REGISTERED APPRENTICES
Wages per hour

1000 hour terms at the following percentage of Journeyman"s wage

1st	2nd	3rd	4th
65%	70%	80%	80%

SUPPLEMENTAL BENEFITS per hour worked

Apprentices $ 27.19

1-190z2H/H

Laborer - Tunnel 10/01/2021

JOB DESCRIPTION Laborer - Tunnel **DISTRICT** 1

ENTIRE COUNTIES
Albany, Fulton, Hamilton, Herkimer, Madison, Montgomery, Oneida, Rensselaer, Saratoga, Schenectady, Schoharie, Washington

WAGES
Class 1: All support laborers/sandhogs working above the shaft or tunnel

Class 2: All laborers/sandhogs working in the shaft or tunnel

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

Class A: Mole nipper, powder handler, changehouse attendant and top laborer, Air spade, jackhammer, pavement breaker, Top bell, Bottom bell, side or roofbelt driller, maintenance men, burners, block layers, rodmen, caulkers, miners helper, trackmen, nippers, derailmen, electrical cablemen, hosemen, groutmen, gravelmen, form workers, movers and shaftmen, conveyor men.

Class B: Powder monkey, Blasters, ironmen and cement worker, miner, welder, heading driller, steel erectors, piledriver, rigger

Per Hour

*For projects bid on or after May 1, 2019

	07/01/2021	07/01/2022
Class 1	$ 42.00	$ 43.50
Class 2	44.00	45.50
Class 4	46.25	47.75
Class 5	37.15	38.25

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional $ 3.00 an hour.

*For projects bid on or before April 30, 2019

Class A	$ 38.80
Class B	39.80

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional $ 2.00 an hour.

SUPPLEMENTAL BENEFITS
Per hour

*For projects bid on or after May 1, 2019

Journeyman	$ 26.50	$ 27.50

*For projects bid on or before April 30, 2019

Journeyman	$ 26.50

OVERTIME PAY
See (B, E, Q, V, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

Note: If the holiday falls on a Sunday, it will be celebrated on Monday.
If the holiday falls on a Saturday, it will be celebrated on Friday.

REGISTERED APPRENTICES
FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and Location where the work is to be performed.

1-190/157T

Lineman Electrician 10/01/2021

JOB DESCRIPTION Lineman Electrician **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Per hour:

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines

Below rates applicable on all overhead and underground distribution and maintenance work, and all overhead and underground transmission line work and the installation of fiber optic cable where no other construction trades are or have been involved. (Ref #14.01.01)

	07/01/2021	05/02/2022	05/01/2023	05/06/2024
Lineman, Technician	$ 54.70	$ 56.00	$ 57.40	$ 58.90
Crane, Crawler Backhoe	54.70	56.00	57.40	58.90
Welder, Cable Splicer	54.70	56.00	57.40	58.90
Digging Mach. Operator	49.23	50.40	51.66	53.01
Tractor Trailer Driver	46.50	47.60	48.79	50.07
Groundman, Truck Driver	43.76	44.80	45.92	47.12
Equipment Mechanic	43.76	44.80	45.92	47.12
Flagman	32.82	33.60	34.44	35.34

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all electrical sub-stations, switching structures, fiber optic cable and all other work not defined as "Utility outside electrical work". (Ref #14.02.01-A)

Lineman, Technician	$ 54.70	$ 56.00	$ 57.40	$ 58.90
Crane, Crawler Backhoe	54.70	56.00	57.40	58.90
Cable Splicer	60.17	61.60	63.14	64.79
Certified Welder -				
Pipe Type Cable	57.44	58.80	60.27	61.85
Digging Mach. Operator	49.23	50.40	51.66	53.01
Tractor Trailer Driver	46.50	47.60	48.79	50.07
Groundman, Truck Driver	43.76	44.80	45.92	47.12
Equipment Mechanic	43.76	44.80	45.92	47.12
Flagman	32.82	33.60	34.44	35.34

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates apply on switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. (Ref #14.02.01-B)

Lineman, Tech, Welder	$ 56.02	$ 57.32	$ 58.72	$ 60.22
Crane, Crawler Backhoe	56.02	57.32	58.72	60.22
Cable Splicer	61.62	63.05	64.59	66.24
Certified Welder -				
Pipe Type Cable	58.82	60.19	61.66	63.23
Digging Mach. Operator	50.42	51.59	52.85	54.20
Tractor Trailer Driver	47.62	48.72	49.91	51.19
Groundman, Truck Driver	44.82	45.86	46.98	48.18
Equipment Mechanic	44.82	45.86	46.98	48.18
Flagman	33.61	34.39	35.23	36.13

Additional $1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all overhead and underground transmission line work & fiber optic cable where other construction trades are or have been involved. This applies to transmission line work only, not other construction. (Ref #14.03.01)

Lineman, Tech, Welder	$ 57.21	$ 58.51	$ 59.91	$ 61.41
Crane, Crawler Backhoe	57.21	58.51	59.91	61.41
Cable Splicer	57.21	58.51	59.91	61.41
Digging Mach. Operator	51.49	52.66	53.92	55.27
Tractor Trailer Driver	48.63	49.73	50.92	52.20
Groundman, Truck Driver	45.77	46.81	47.93	49.13
Equipment Mechanic	45.77	46.81	47.93	49.13
Flagman	34.33	35.11	35.95	36.85

Additional $1.00 per hour for entire crew when a helicopter is used.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM to 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM to 1:00 AM REGULAR RATE PLUS 17.3 %
3RD SHIFT	12:30 AM to 9:00 AM REGULAR RATE PLUS 31.4 %

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.
NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):

	$25.40 *plus 7% of hourly Wage	$ 25.90 *plus 7% of hourly wage	$ 26.40 *plus 7% of hourly wage	$ 26.90 *plus 7% of hourly wage
Journeyman Lineman or Equipment Operators with Crane License	$ 26.40 *plus 7% of hourly wage	$ 27.90 *plus 7% of hourly wage	$ 29.40 *plus 7% of hourly wage	$ 30.90 *plus 7% of hourly wage

*The 7% is based on the hourly wage paid, straight time or premium time.

OVERTIME PAY
See (B, E, Q,) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.
NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2021	05/02/2022	05/01/2023	05/06/2024
$25.40 *plus 7% of hourly Wage	$ 25.90 *plus 7% of hourly wage	$ 26.40 *plus 7% of hourly wage	$ 26.90 *plus 7% of hourly wage

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a

Lineman Electrician - Teledata 10/01/2021

JOB DESCRIPTION Lineman Electrician - Teledata **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per hour:

For outside work, stopping at first point of attachment (demarcation).

	07/01/2021
Cable Splicer	$ 34.78
Installer, Repairman	$ 33.01
Teledata Lineman	$ 33.01
Tech., Equip. Operator	$ 33.01
Groundman	$ 17.50

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 5.14 *plus 3% of wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting 10/01/2021

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/groundman truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.
(Ref #14.01.01)

Per hour:	07/01/2021	05/02/2022	05/01/2023	05/06/2024
Lineman, Technician	$ 47.15	$ 48.19	$ 49.32	$ 50.54
Crane, Crawler Backhoe	47.15	48.19	49.32	50.54
Certified Welder	49.51	50.60	51.79	53.07
Digging Machine	42.44	43.37	44.39	45.49
Tractor Trailer Driver	40.08	40.96	41.92	42.96
Groundman, Truck Driver	37.72	38.55	39.46	40.43
Equipment Mechanic	37.72	38.55	39.46	40.43
Flagman	28.29	28.91	29.59	30.32

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

NOTE: THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM	REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM	REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM	REGULAR RATE PLUS 31.4%

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. Tuesday thru Friday may be worked with no make-up day.
NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):

	$25.40 *plus 7% of hourly Wage	$ 25.90 *plus 7% of hourly wage	$ 26.40 *plus 7% of hourly wage	$ 26.90 *plus 7% of hourly wage
Journeyman Lineman or Equipment Operators with Crane License	$ 26.40 *plus 7% of hourly wage	$ 27.90 *plus 7% of hourly wage	$ 29.40 *plus 7% of hourly wage	$ 30.90 *plus 7% of hourly wage

*The 7% is based on the hourly wage paid, straight time or premium time.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE. *Note* Double time for all emergency work designated by the Dept. of Jurisdiction.
NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES
WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyman Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2021	05/02/2022	05/01/2023	05/06/2024
$25.40 *plus 7% of hourly Wage	$ 25.90 *plus 7% of hourly wage	$ 26.40 *plus 7% of hourly wage	$ 26.90 *plus 7% of hourly wage

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249a-LT

Lineman Electrician - Tree Trimmer — 10/01/2021

JOB DESCRIPTION Lineman Electrician - Tree Trimmer **DISTRICT** 6

ENTIRE COUNTIES
Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Wyoming, Yates

WAGES
Applies to line clearance, tree work and right-of-way preparation on all new or existing energized overhead or underground electrical, telephone and CATV lines. This also would include stump removal near underground energized electrical lines, including telephone and CATV lines.

Per hour:	07/01/2021	01/02/2022	12/31/2023
Tree Trimmer	$ 27.36	$ 28.25	$ 29.80
Equipment Operator	24.19	24.98	26.35
Equipment Mechanic	24.19	24.98	26.35
Truck Driver	20.15	20.80	21.94
Groundman	16.59	17.13	18.07
Flag person	12.50*	12.50*	13.03*

*NOTE: Subject to change due to any minimum wage increases. Rate effective 12/31/2021: $13.20

SUPPLEMENTAL BENEFITS
Per hour worked (but also required on non-worked holidays):

Journeyman	$ 9.98 *plus 3% of hourly wage	$ 10.23 *plus 3% of hourly wage	$ 10.48 *plus 3% of hourly wage

* The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
NOTE: WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY
Paid: See (5, 6, 8, 15) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 25) on HOLIDAY PAGE
NOTE: All paid holidays falling on a Saturday shall be observed on the preceding Friday.
All paid holidays falling on a Sunday shall be observed on the following Monday.

6-1249TT

Mason - Building — 10/01/2021

JOB DESCRIPTION Mason - Building **DISTRICT** 12

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES

Per hour	07/01/2021
Tile/Marble/Terrazzo	
Setter	$ 36.21
Finisher	28.22

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman Setter	$ 21.13
Journeyman Finisher	18.27

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour

Hour Terms at the following percentage of Journeyman's wage

Setter:	
1st term 0-500 hrs	60%
2nd term 501-1500 hrs	70%
3rd term 1501-2500 hrs	80%
4th term 2501-3500 hrs	85%
5th term 3501-4500 hrs	90%
6th term 4501-6000 hrs	95%
Finisher:	
1st term 0-500 hrs	70%
2nd term 501-1500 hrs	80%
3rd term 1501-2500 hrs	90%
4th term 2501-3700 hrs	95%

Supplemental Benefits per hour worked

	07/01/2021
Setter:	
1st term 0-500 hrs	$ 12.48
2nd term 501-1500 hrs	12.48
3rd term 1501-2500 hrs	16.81
4th term 2501-3500 hrs	16.81
5th term 3501-4500 hrs	18.96
6th term 4501-6000 hrs	21.13
Finisher:	
1st term 0-500 hrs	$ 11.82
2nd term 501-1500 hrs	11.82
3rd term 1501-2500 hrs	15.05
4th term 2501-3700 hrs	15.05

12-2TS.1

Mason - Building — 10/01/2021

JOB DESCRIPTION Mason - Building **DISTRICT** 12

ENTIRE COUNTIES
Albany, Columbia, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Washington

PARTIAL COUNTIES
Warren: Only the Townships of Bolton, Lake George, Lake Luzerne,Queensbury, Stony Creek, Thurman & Warrensburg.

WAGES
Per hour 07/01/2021

Bricklayer	$ 38.69
Cement Mason(Bldg)	38.69
Plasterer/Fireproofing*	38.69
Pointer/Caulker/Cleaner	38.69
Stone Mason	38.69
Acid Brick	39.19

(*)Fireproofing of Structural only.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 22.28

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour

750 hour terms at the following percentage of Journey's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
60%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

All Terms	$ 22.28

12-2b.1

Mason - Heavy&Highway **10/01/2021**

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 12

ENTIRE COUNTIES
Albany, Cayuga, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Madison, Montgomery, Oneida, Oswego, Rensselaer, Saratoga, Schenectady, Schoharie, St. Lawrence, Warren, Washington

PARTIAL COUNTIES
Onondaga: For Heavy & Highway Cement Mason or Plaster Work in Onondaga County, refer to Mason-Heavy&Highway tag 1-2h/h on.

WAGES
Per hour

	07/01/2021
Mason & Bricklayer	$ 39.91

Additional $1.00 per hour for work on any swing scaffold or staging suspended by means of ropes or cables.

SUPPLEMENTAL BENEFITS
Per hour worked

Journeyman	$ 21.13

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If a holiday falls on Sunday, the Monday following shall constitute the day of the legal holiday.

REGISTERED APPRENTICES
Wages per hour

750 HR TERMS at the following percent of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
60%	60%	65%	70%	75%	80%	85%	90%

Supplemental Benefits per hour worked

0 to 500 Hours	$ 12.73

All Other 20.79

12-2hh.1

Millwright 10/01/2021

JOB DESCRIPTION Millwright **DISTRICT** 2

ENTIRE COUNTIES
Albany, Chenango, Delaware, Fulton, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie

WAGES
Per hour: 07/01/2021

Building	$ 33.65
Heavy & Highway	35.65

NOTE ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):
- Certified Welders shall receive $1.75 per hour in addition to the current Millwrights rate provided he/she is directed to perform certified welding.
- For Building work if a work site has been declared a hazardous site by the Owner and the use of protective gear (including, as a minimum, air purifying canister-type chemical respirators) are required, then that employee shall receive a $1.50 premium per hour for Building work.
- For Heavy & Highway work if the work is performed at a State or Federally designated hazardous waste site where employees are required to wear protective gear, the employees performing the work shall receive an additional $2.00 per hour over the millwright heavy and highway wage rate for all hours worked on the day protective gear was worn.
- An employee performing the work of a machinist shall receive $2.00 per hour in addition to the current Millwrights rate. For the purposes of this premium to apply, a "machinist" is a person who uses a lathe, Bridgeport, milling machine or similar type of tool to make or modify parts.
- When performing work underground at 500 feet and below, the employee shall receive an additional $1.00.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyman	$ 25.39

OVERTIME PAY
See (B, E, *E2, Q) on OVERTIME PAGE
*Note - Saturday may be used as a make-up day and worked at the straight time rate of pay during a work week when conditions such as weather, power failure, fire, or natural disaster prevent the performance of work on a regular scheduled work day.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday that falls on Sunday shall be observed the following Monday. Any holiday that falls on Saturday shall be observed the preceding Friday.

REGISTERED APPRENTICES
Wages per hour:

(1)year terms at the following percentage of journeymans rate.

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour:

Apprentices:

1st term	$ 11.91
2nd term	21.34
3rd term	22.70
4th term	24.04

2-1163.1

Operating Engineer - Building 10/01/2021

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

PARTIAL COUNTIES
Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES

CLASS A1:
Crane, hydraulic cranes, tower crane, locomotive crane, piledriver, cableway, derricks,whirlies, dragline, boom trucks over 5 tons.

CLASS A:
Shovel, all Excavators (including rubber tire full swing), Gradalls, power road grader, all CMI equipment, front-end rubber tire loader, tractor-mounted drill (quarry master), mucking machine, concrete central mix plant, concrete pump, belcrete system, automated asphalt concrete plant, and tractor road paver, boom trucks 5 tons and under, maintenance engineer, self-contained crawler drill-hydraulic rock drill.

CLASS B:
Backhoes (rubber tired backhoe/loader combination), bulldozer, pushcat, tractor, traxcavator, scraper, LeTourneau grader, form fine grader, self-propelled soil compactor (fill roller), asphalt roller, blacktop spreader, power brooms, sweepers, trenching machine, Barber Green loader, side booms, hydro hammer, concrete spreader, concrete finishing machine, one drum hoist, power hoisting (single drum), hoist two drum or more, three drum engine, power hoisting (two drum and over), two drum and swinging engine, three drum swinging engine, hod hoist, A-L frame winches, core and well drillers (one drum), post hole digger, model CHB Vibro-Tamp or similar machine, batch bin and plant operator, dinky locomotive, skid steer loader, track excavator 5/8 cubic yard or smaller, front end rubber tired loader under four cubic yards, vacum machine (mounted or towed).

CLASS C:
Fork lift, high lift, all terrain fork lift: or similar, oiler, fireman and heavy-duty greaser, boilers and steam generators, pump, vibrator, motor mixer, air compressor, dust collector, welding machine, well point, mechanical heater, generators, temporary light plants, electric submersible pumps 4" and over, murphy type diesel generator, conveyor, elevators, concrete mixer, beltcrete power pack (belcrete system), seeding, and mulching machines, pumps.

* In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2021	07/01/2022
Class # A1	$ 46.71	$ 47.81
Class # A	46.22	47.32
Class # B	45.20	46.30
Class # C	42.30	43.40

Additional $0.50 per hr for Tower Cranes.
Additional $1.25 per hr for Cranes with Boom length & jib 150ft. and over.
Additional $2.25 per hr for Cranes with Boom length & jib 200ft. and over.
Additional $2.50 per hr over B rate for Nuclear Leader work.
Additional $0.40 per hr for tunnel or excavation of shaft 40' or more deep.
Additional $2.50 per hour if work requires Personal Protective Equipment for hazardous waste site activities with a level C or over rating.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour

	07/01/2021	07/01/2022
Journeyman	$ 29.40	30.55

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If a holiday falls on Sunday, it will be celebrated on Monday. If the holiday falls on Saturday, it will be celebrated on Friday. Employees who work a designated holiday shall be paid double time plus 8 hours of straight time.

REGISTERED APPRENTICES

Wages per hour

1000 hours terms at the following percentage of Journeyperson's wage Class B

1st	2nd	3rd	4th

60% 70% 80% 90%

Supplemental Benefits per hour worked

	07/01/2021	07/01/2022
All terms	$ 24.70	25.85

1-158 Alb

Operating Engineer - Heavy&Highway 10/01/2021

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Albany, Broome, Chenango, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Tioga, Warren, Washington

PARTIAL COUNTIES
Dutchess: Defined as north of the northern boundary line of City of Poughkeepsie then due east to Route 115 to Bedelt Road then east along Bedelt Road to VanWagner Road then north along VanWagner Road to Bower Road then east along Bower Road to Rte. 44 east to Route 343 then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to Connecticut.

WAGES
CLASSIFICATION A:
Asphalt Curb Machine (Self Propelled, Slipform), Asphalt Paver, Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Backhoe (Except Tractor Mounted, Rubber Tired), Backhoe Excavator Full Swing (CAT 212 or similar type), Back Filling Machine, Belt Placer (CMI Type), Blacktop Plant (Automated), Boom truck, GPS operated Bull Dozer, Cableway, Caisson Auger, Central Mix Concrete Plant (Automated), Concrete Curb Machine (Self Propelled, Slipform), Concrete Pump, Crane, Cherry Picker, Derricks (steel erection), Dragline, Overhead Crane (Gantry or Straddle type), Pile Driver, Truck Crane, Directional Drilling Machine, Dredge, Dual Drum Paver, Excavator (All PurposeHydraulically Operated) (Gradall or Similar), Front End Loader (4 cu. yd. and Over), Head Tower (Sauerman or Equal), Hoist (Two or Three Drum), Holland Loader, Maintenance Engineer, Mine Hoist, Mucking Machine or Mole, Pavement Breaker(SP) Wertgen; PB-4 and similar type, Power Grader, Profiler (over 105 H.P.), Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver (If a second man is needed, he shall be an Oiler), Tractor Drawn BeltType Loader, Truck or Trailer Mounted Log Chipper (Self Feeder), Tug Operator (Manned Rented Equipment Excluded), Tunnel Shovel

CLASSIFICATION B:
Backhoe (Tractor Mounted, Rubber Tired), Bituminous Recycler Machine, Bituminous Spreader and Mixer, Blacktop Plant (NonAutomated), Blast or Rotary Drill (Truck or Tractor Mounted), Brokk, Boring Machine, Cage Hoist, Central Mix Plant [(NonAutomated) and All Concrete Batching Plants], Concrete Paver (Over 16S), Crawler Drill (Self-contained), Crusher, Diesel Power Unit, Drill Rigs, Tractor Mounted, Front End Loader (Under 4 cu. yd.), Greaseman/Lubrication Engineer, HiPressure Boiler (15 lbs. and over), Hoist (One Drum), Hydro-Axe, Kolman Plant Loader and Similar Type Loaders (If Employer requires another man to clean the screen or to maintain the equipment, he shall be an Oiler), L.C.M. Work Boat Operator, Locomotive, Material handling knuckle boom, Mini Excavator (under 18,000 lbs.), Mixer (for stabilized base selfpropelled), Monorail Machine, Plant Engineer, Prentice Loader, Profiler (105 H.P. and under), Pug Mill, Pump Crete, Ready Mix Concrete Plant, Refrigeration Equipment (for soil stabilization), Road Widener, Roller (all above subgrade), Sea Mule, Self-contained Ride-on Rock Drill(Excluding Air-Track Type Drill), Skidder, Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Vacum machine (mounted or towed), Vermeer saw (ride on, any size or type), Welder, Winch, Winch Cat

CLASSIFICATION C:
A Frame Winch Hoist on Truck, Articulated Heavy Hauler, Aggregate Plant, Asphalt or Concrete Grooving Machine (ride on), Ballast Regulator(Ride-on), Boiler (used in conjunction with production), Bituminous Heater (self-propelled), Boat (powered), Cement and Bin Operator, Concrete Pavement Spreader and Finisher Concrete Paver or Mixer (16' and under), Concrete Saw (self-propelled), Conveyor, Deck Hand, Directional Drill Machine Locator, Drill (Core and Well), Farm Tractor with accessories, Fine Grade Machine, Fireman, Fork Lift, Form Tamper, Grout Pump, Gunite Machine, Hammers (Hydraulic self-propelled), Hydra-Spiker (ride-on), Hydraulic Pump (jacking system), Hydro-Blaster (Water), Mulching Machine, Oiler, Parapet Concrete or Pavement Grinder, Post Hole Digger and Post Driver, Power Broom (towed), Power Heaterman, Power Sweeper, Revinius Widener, Roller (Grade and Fill), Scarifier (ride-on), Shell Winder, Skid steer loader (Bobcat or similar), Span-Saw (ride-on), Steam Cleaner, Tamper (ride-on), Tie Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on), Tire Repair, Track Liner (ride-on), Tractor, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point, and the following hands-off equipment: Compressors, Dust Collectors, Generators, Pumps, Welding Machines, Light Plants and Heaters

- Note for all above classifications of Operating Engineer - In the event that equipment listed above is operated by robotic control, the classification covering the operation will be the same as if manually operated.

WAGES per hour

	07/01/2021	07/01/2022
Master Mechanic	$ 49.43	$ 51.03
Class A*	47.82	49.42
Class B	46.91	48.51

Class C	44.34	45.94

Additional $2.50 per hour for All Employees who work a single irregular work shift starting from 5:00 PM to 1:00 AM that is mandated by the Contracting Agency.
Additional $2.50 per hr. for hazardous waste removal work on State and/or Federally designated waste site which require employees to wear Level C or above forms of personal protection.

(*) Premiums for CRANES is based upon Class A rates with the following premiums:
- Additional $4.00 per hr for Tower Cranes, including self erecting.
- Additional $3.00 per hr for Lattice Boom Cranes and all other cranes with a manufacturers rating of fifty (50) tons and over.
- Additional $2.00 per hr for all Hydraulic Cranes and Derricks with a manufacturer's rating of 49 ton and below, including boom trucks.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyperson	$ 29.60	$ 30.75

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If the holiday falls on Sunday, it will be celebrated on Monday. If the Holiday falls on a Saturday employer can choose to celebrate Saturday or give Friday off with pay.

REGISTERED APPRENTICES
Wages per hour

1000 hours terms at the following percentage of Journeyperson's wage Class B

1st	2nd	3rd	4th
60%	70%	80%	90%

Supplemental Benefits per hour worked

	07/01/2021	07/01/2022
All Terms	$ 25.00	$ 26.15

1-158H/H Alb

Operating Engineer - Survey Crew — 10/01/2021

JOB DESCRIPTION Operating Engineer - Survey Crew **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.
Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES
These rates apply to Building, Tunnel and Heavy Highway.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2021
Party Chief	$ 45.84

Instrument Person	42.11
Rod Person	31.21

Additional $3.00/hr. for Tunnel Work
Additional $2.50/hr. for Hazardous Work Site

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 27.20

OVERTIME PAY
See (B, E, P, *X) on OVERTIME PAGE
*Note: $23.60/Hr. Only for "ALL" premium hours paid when worked.

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on the Percentage of Rod Persons Wage:

	07/01/2021
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFIT per hour worked:

0-1000	$ 18.73 / PHP $16.53
1001-2000	21.85 / " 18.95
2001-3000	24.97 / " 21.43

NOTE: PHP is premium hours paid when worked.

12-158-545 D.H.H.

Operating Engineer - Survey Crew - Consulting Engineer — 10/01/2021

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 12

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: The northern portion of the county from the northern boundary line of the City of Poughkeepsie, north.
Genesee: Only the portion of the county that lies east of a line down the center of Route 98 to include all area that lies within the City of Batavia.

WAGES
These rates apply to feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a Consulting Engineer Agreement.

Per hour:
SURVEY CLASSIFICATIONS:

Party Chief - One who directs a survey party.
Instrument Person - One who operates the surveying instruments.
Rod Person - One who holds the rods and assists the Instrument Person.

	07/01/2021
Party Chief	$ 45.84
Instrument Person	42.11
Rod Person	31.21

Additional $3.00/hr. for Tunnel Work.
Additional $2.50/hr. for EPA or DEC certified toxic or hazardous waste work.

SUPPLEMENTAL BENEFITS
Per hour worked:

Journeyman	$ 27.20

OVERTIME PAY
See (B, E, Q, *X) on OVERTIME PAGE
*Note: $23.60/Hr. Only for "ALL" premium hours paid when worked.

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES: 1000 hour terms based on percentage of Rod Persons Wage:

	07/01/2021
0-1000	60%
1001-2000	70%
2001-3000	80%

SUPPLEMENTAL BENEFIT per hour worked:

0-1000	$ 18.73 / PHP $16.53
1001-2000	$ 21.85 / " 18.95
2001-3000	$ 24.97 / " 21.43

NOTE: PHP is premium hours paid when worked.

12-158-545 DCE

Operating Engineer - Tunnel — 10/01/2021

JOB DESCRIPTION Operating Engineer - Tunnel **DISTRICT** 7

ENTIRE COUNTIES
Albany, Allegany, Broome, Cayuga, Chemung, Chenango, Clinton, Columbia, Cortland, Essex, Franklin, Fulton, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Oneida, Onondaga, Ontario, Oswego, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Warren, Washington, Wayne, Yates

PARTIAL COUNTIES
Dutchess: Northern part of Dutchess, to the northern boundary line of the City of Poughkeepie, then due east to Route 115 to Bedell Road, then east along Bedell Road to VanWagner Road, then north along VanWagner Road to Bower Road, then east along Bower Road to Rte. 44 east to Rte. 343, then along Rte. 343 east to the northern boundary of the Town of Dover Plains and east along the northern boundary of the Town of Dover Plains, to the borderline of the State of Connecticut.
Genesee: Only that portion of the county that lies east of a line drawn down the center of Route 98 and the entirety of the City of Batavia.

WAGES
CLASS A: Automatic Concrete Spreader (CMI Type); Automatic Fine Grader; Backhoe (except tractor mounted,rubber tired); Belt Placer (CMI Type); Blacktop Plant (automated); Cableway; Caisson Auger; Central Mix Concrete Plant (automated); Concrete Curb Machine (self-propelled slipform); Concrete Pump (8" or over); Dredge; Dual Drum Paver; Excavator; Front End Loader (4 cu. yd & over); Gradall; Head Tower (Sauerman or Equal); Hoist (shaft); Hoist (two or three Drum); Log Chipper/Loader (self-feeder); Maintenance Engineer (shaft and tunnel); any Mechanical Shaft Drill; Mine Hoist; Mining Machine(Mole and similar types); Mucking Machine or Mole; Overhead Crane (Gantry or Straddle Type); Pile Driver; Power Grader; Remote Controlled Mole or Tunnel Machine; Scraper; Shovel; Side Boom; Slip Form Paver (If a second man is needed, they shall be an Oiler); Tripper/Maintenance Engineer (shaft & tunnel); Tractor Drawn Belt-Type Loader; Tug Operator (manned rented equipment excluded); Tunnel Shovel

CLASS B: Automated Central Mix Concrete Plant; Backhoe (topside); Backhoe (track mounted, rubber tired); Backhoe (topside); Bituminous Spreader and Mixer, Blacktop Plant (non-automated); Blast or Rotary Drill (truck or tractor mounted); Boring Machine; Cage Hoist; Central Mix Plant(non-automated); all Concrete Batching Plants; Compressors (4 or less exceeding 2,000 c.f.m. combined capacity); Concrete Pump; Crusher; Diesel Power Unit; Drill Rigs (tractor mounted); Front End Loader (under 4 cu. yd.); Grayco Epoxy Machine; Hoist (One Drum); Hoist (2 or 3 drum topside); Knuckle Boom material handler; Kolman Plant Loader & similar type Loaders (if employer requires another person to clean the screen or to maintain the equipment, they shall be an Oiler); L.C.M. Work Boat Operator; Locomotive; Maintenance Engineer (topside); Maintenance Grease Man; Mixer (for stabilized base-self propelled); Monorail Machine; Plant Engineer; Personnel Hoist; Pump Crete; Ready Mix Concrete Plant; Refrigeration Equipment (for soil stabilization); Road Widener; Roller (all above sub-grade); Sea Mule; Shotcrete Machine; Shovel (topside); Tractor with Dozer and/or Pusher; Trencher; Tugger Hoist; Tunnel Locomotive; Vacuum Machine (mounted or towed); Welder; Winch; Winch Cat

CLASS C: A Frame Truck; All Terrain Telescoping Material Handler; Ballast Regulator (ride-on); Compressors (4 not to exceed 2,000 c.f.m. combined capacity; or 3 or less with more than 1200 c.f.m. but not to exceed 2,000 c.f.m.); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (4 or any type combination)); Concrete Pavement Spreaders and Finishers; Conveyor; Drill (core); Drill (well); Electric Pump used in conjunction with Well Point System; Farm Tractor with Accessories; Fine Grade Machine; Fork Lift; Grout Pump (over 5 cu. ft.); Gunite Machine; Hammers (hydraulic-self-propelled); Hydra-Spiker (ride-on); Hydra-Blaster (water); Hydro-Blaster; Motorized Form Carrier; Post Hole Digger and Post Driver; Power Sweeper; Roller grade & fill); Scarifer (ride-on); Span-Saw (ride-on); Submersible Electric Pump (when used in lieu of well points); Tamper (ride-on); Tie-Extractor (ride-on), Tie Handler (ride-on), Tie Inserter (ride-on), Tie Spacer (ride-on); Track Liner (ride-on); Tractor with towed accessories; Vibratory Compactor; Vibro Tamp, Well Point

CLASS D: Aggregate Plant; Cement & Bin Operator; Compressors (3 or less not to exceed 1,200 c.f.m. combined capacity); Compressors ((any size, but subject to other provisions for compressors), Dust Collectors, Generators, Pumps, Welding Machines, Light Plants (3 or less or any type or combination)); Concrete Saw (self-propelled); Form Tamper; Greaseman; Hydraulic Pump (jacking system); Junior Engineer; Light Plants; Mulching Machine; Oiler; Parapet Concrete or Pavement Grinder; Power Broom (towed); Power Heaterman (when used for production); Revinius Widener; Shell Winder; Steam Cleaner; Tractor

Per hour:	07/01/2021	07/01/2022
Master Mechanic	$ 51.00	$ 52.60
CLASS A	48.59	50.19
CLASS B	47.37	48.97
CLASS C	44.58	46.18
CLASS D	41.57	43.17

Additional $5.00 per hour for Hazardous Waste Work on a state or federally designated hazardous waste site where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection. Fringe benefits will be paid at the hourly wage premium.

CRANES:
Crane 1: All cranes, including self-erecting to be paid $4.00 per hour over the Class A rate.
Crane 2: All Lattice Boom Cranes and all cranes with a manufacturer"s rating of fifty (50) ton and over to be paid $3.00 per hour over Class A rate.
Crane 3: All hydraulic cranes and derricks with a manufacturer"s rating of forty nine (49) ton and below, including boom trucks, to be paid $2.00 per hour over Class A rate.

Crane 1	$ 52.59	$ 54.19
Crane 2	51.59	53.19
Crane 3	50.59	52.19

SUPPLEMENTAL BENEFITS
Per hour:

	$ 22.80	$ 23.70
	+ 9.10*	+ 9.35*

* This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY
See (B, B2, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
If a holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
WAGES:(1000) hours terms at the following percentage of Journeyman's Class B wage.

1st term	60%
2nd term	65%
3rd term	70%
4th term	75%

SUPPLEMENTAL BENEFITS per hour: Same as Journeyman

7-158-832TL.

Painter — 10/01/2021

JOB DESCRIPTION Painter **DISTRICT** 1

ENTIRE COUNTIES
Albany, Essex, Fulton, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2021	05/01/2022 Additional
Painter\Wallcovers	$ 30.49	$ 1.45
Drywall Finishers	30.49	
Spray Rate	30.49	
Structrual Steel*	31.49	

Lead Abatement	31.49
Lead Abatement on Structural Steel	32.49

(*)Employees working on objects with the use of swing stage, boatswain chair, pick and cables only will be paid at Structural Steel rate.

Bridge Painter
See Bridge Painter rates for the following work:
All Bridges and Tanks

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyperson	$ 18.35

OVERTIME PAY
See (B, E2, H) on OVERTIME PAGE
THE FOLLOWING ADDITIONAL HOURLY RATE WILL APPLY ON ALL CONTRACTING AGENCY MANDATED SHIFT(S) OR SINGULAR IRREGULAR SHIFT WHEN THE SHIFT STARTS BETWEEN THE HOURS LISTED BELOW:

2:30 PM to 6:00 AM PLUS $1.00 TO APPLICABLE RATE*

*Additional $1.00 is Not Subject to Overtime

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: If the holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES
Wages per hour

1000 hour terms at the following percentage of Journeyperson's base wage

1st	2nd	3rd	4th	5th	6th
45%	50%	60%	70%	80%	90%

Supplemental Benefits per hour

All Terms	$ 18.35

1-201-P

Painter - Bridge & Structural Steel — 10/01/2021

JOB DESCRIPTION Painter - Bridge & Structural Steel **DISTRICT** 8

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per Hour:
STEEL:

	07/01/2021	10/01/2021
Bridge Painting:	$ 51.50	$ 53.00
	+ 8.63*	+ 9.63*

ADDITIONAL $6.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SHIFT WORK:

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:	07/01/2021	10/01/2021
	$ 10.90	$ 10.90
	+ 30.00*	+ 30.60*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms

	07/01/2021	10/01/2021
1st year	$ 20.60	$ 21.20
	+ 3.45*	+ 3.86*
2nd year	$ 30.90	$ 31.80
	+ 5.18*	+ 5.78*
3rd year	$ 41.20	$ 42.40
	+ 6.90*	+ 7.70*

Supplemental Benefits - Per hour:

1st year	$ .25	$ .25
	+ 12.00*	+ 12.24*
2nd year	$ 10.90	$ 10.90
	+ 18.00*	+ 18.36*
3rd year	$ 10.20	$ 10.90
	+ 24.00*	+ 24.48*

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

Painter - Line Striping — 10/01/2021

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per hour:

Painter (Striping-Highway):	07/01/2021	07/01/2022

Striping-Machine Operator*	$ 30.32	$ 31.53
Linerman Thermoplastic	36.93	38.34

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour paid:	07/01/2021	07/01/2022
Journeyworker:		
Striping Machine Operator:	$ 10.03	$ 10.03
Linerman Thermoplastic:	10.03	10.03

OVERTIME PAY
See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rates:

	07/01/2021	12/31/2021	07/01/2022
1st Term*:	$ 15.00	$ 15.00	$ 15.00
1st Term**:	14.00	15.00	15.00
1st Term***:	12.50	13.20	13.20
2nd Term:	18.19	18.19	18.92
3rd Term:	24.26	24.26	25.22

*Bronx, Kings, New York, Queens, Richmond, and Suffolk counties
**Nassau and Westchester counties
***All other counties

Supplemental Benefits per hour:

1st term:	$ 9.16	$ 9.16	$ 9.16
2nd Term:	9.16	9.16	10.03
3rd Term:	9.16	9.16	10.03

8-1456-LS

Painter - Metal Polisher — 10/01/2021

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2021
Metal Polisher	$ 37.13
Metal Polisher*	38.23
Metal Polisher**	41.13

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2021
Journeyworker:	

All classification $ 10.64

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2021
1st year	$ 16.00
2nd year	17.00
3rd year	18.00
1st year*	$ 16.39
2nd year*	17.44
3rd year*	18.54
1st year**	$ 18.50
2nd year**	19.50
3rd year**	20.50

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 7.39
2nd year	7.39
3rd year	7.39

8-8A/28A-MP

Plumber — 10/01/2021

JOB DESCRIPTION Plumber **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Schenectady, Schoharie

PARTIAL COUNTIES
Hamilton: Only the Towns of Arietta, Benson, Hope, Inlet, Lake Pleasant, Morehouse and Wells.
Saratoga: Only the Towns of Charlton, Clifton Park, Galway,Halfmoon, Milton, Stillwater and Waterford and the city of Mechanicville.

WAGES
Per hour:

	07/01/2021
Plumber:	
Pipefitter, Steamfitter	$ 45.25

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 27.74

OVERTIME PAY
See (B1, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Whenever a Holiday falls on Saturday, the preceding day, Friday, shall be observed as the Holiday. If a Holiday falls on a Sunday, the following day, Monday shall be observed as the Holiday.

REGISTERED APPRENTICES
Wages per hour
One year terms at the following percentage of Journeyperson's wage.

1st	2nd	3rd	4th	5th

45 % 55 % 65 % 75 % 90 %

Supplemental Benefits per hour:

Apprentices Indentured on or before April 30, 2019

All Terms $ 27.74

Apprentices Indentured on or after May 1st, 2019
Terms 1-3 $ 22.54
Terms 4-5 $ 27.74

1-7-SF

Roofer 10/01/2021

JOB DESCRIPTION Roofer **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Warren, Washington

WAGES
Per hour

	07/01/2021
Roofer/Waterproofer	$ 32.05
Asphalt Cold Process	32.55
Fluid Applied Roof	32.55
Pitch & Asbestos	34.05

Shift Work:
On government mandated shift work starting after 12:00pm and before 4:00am workers shall be paid $4.00 additional per hour

SUPPLEMENTAL BENEFITS
Per hour

Journeyman $ 21.52

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When any Holiday falls on Saturday, the Friday before such Holiday shall be recognized as the legal Holiday. When a Holiday falls on Sunday, it shall be observed the following Monday.

REGISTERED APPRENTICES
Wages per hour

Apprentice terms at the following per cent of the Roofer/Waterproofer rate. For Pitch & Asbestos work, an additional $2.00 must be paid in wages. For Asphalt Cold Process work and Fluid Applied Roof coating, an additional $0.50 must be paid in the wages.

1st Term 58%
1500 hrs.

2nd Term 74%
1 yr. and 1500 hrs. as 1st term.

3rd Term 90%
1 yr. and 1500 hrs. as 2nd term.

3rd Term complete at 1 yr and 1050 hrs. as 3rd term

Supplemental Benefits per hour worked

1st Term $ 19.94
2nd Term 20.37
3rd Term 20.85

1-241

Sheetmetal Worker 10/01/2021

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 1

ENTIRE COUNTIES
Albany, Clinton, Columbia, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington

WAGES
Per hour

	07/01/2021
Sheetmetal Worker	$ 35.16

All work requiring HAZWOPER Training additional $1.00 per hour

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day. NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour

Journeyman	$ 34.55

OVERTIME PAY
See (B,E,E5,Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
When any holiday falls on Saturday, the Friday before such holiday shall be recognized as the legal holiday. Any holiday falling on Sunday, the following Monday shall be recognized as the legal holiday.

REGISTERED APPRENTICES
Wages per hour

6 Month Terms at the following rate:

1st term	$ 19.55
2nd term	$ 21.19
3rd term	$ 22.02
4th term	$ 22.84
5th term	$ 21.57
6th term	$ 22.64
7th term	$ 24.43
8th term	$ 26.22
9th term	$ 28.01
10th term	$ 29.79

Supplemental Benefits per hour

1st term	$ 21.23
2nd term	$ 21.83
3rd term	$ 22.13
4th term	$ 22.56
5th term	$ 28.97
6th term	$ 29.40
7th term	$ 30.14
8th term	$ 30.88
9th term	$ 31.61
10th term	$ 32.34

1-83

Sprinkler Fitter 10/01/2021

JOB DESCRIPTION Sprinkler Fitter **DISTRICT** 1

ENTIRE COUNTIES
Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Otsego, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates

WAGES

Per hour	07/01/2021
Sprinkler Fitter	$ 36.33

SUPPLEMENTAL BENEFITS
Per hour

Journeyperson	$ 27.14

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES
Wages per hour

One Half Year terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 17.48	$ 19.43	$ 21.12	$ 23.06	$ 25.00	$ 26.95	$ 28.89	$ 30.83	$ 32.77	$ 34.72

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$ 8.27	$ 8.27	$ 19.22	$ 19.22	$ 19.47	$ 19.47	$ 19.47	$ 19.47	$ 19.47	$ 19.47

1-669

Teamster - Building — 10/01/2021

JOB DESCRIPTION Teamster - Building **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, Washington

PARTIAL COUNTIES
Warren: Only the Townships of Bolton, Warrensburg, Thurman,Stony Creek, Lake George, Lake Luzerne and Queensbury.

WAGES
GROUP # A:
Straight trucks, winch, transit mix on the site, road oilers,
dump trucks, pick-ups, panel, water trucks, fuel trucks on the site
(including nozzle).

GROUP # B:
Low boy or Low boy trailer, Euclids or similar equipment.

WAGES per hour

	07/01/2021	07/01/2022
Group A	$ 28.52	$ 29.02
Group B	28.82	29.32

SUPPLEMENTAL BENEFITS

Per hour	07/01/2021	07/01/2022
Journeyperson	$ 26.32	$ 27.54

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE
Note: Any holiday which occurs on Sunday shall be observed the following Monday.

1-294

Teamster - Heavy&Highway — 10/01/2021

JOB DESCRIPTION Teamster - Heavy&Highway **DISTRICT** 1

ENTIRE COUNTIES
Albany, Columbia, Fulton, Greene, Hamilton, Herkimer, Montgomery, Oneida, Rensselaer, Saratoga, Schenectady, Schoharie, Washington

PARTIAL COUNTIES
Chenango: Entire county except the Townships of Afton, Bainbridge, Coventry, Greene, Guilford, Oxford and Smithville.
Lewis: Only the Township of Grieg, Lewis, Leyden, Lowville, Lyonsdale, Martinsburg, Turin, West Turin and Watson.
Madison: Only the Townships of Brookfield, Eaton, Hamilton, Lebanon, Lincoln, Madison, Smithfield, Stockbridge and the City of Oneida
Otsego: Entire county EXCEPT Townships of Butternuts, Laurens, Maryland, Milford, Morris, Oneonta, Otego, Unidilla and Worchester.
Warren: Only the Townships of Bolton, Warrensburg, Thurman, Stony Creek, Luzerne, Caldwell (Lake George), and Queensbury.

WAGES
GROUP #1:
Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy Material Trucks(straight jobs), Single Axel Dump Trucks, Dumpsters, Material Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers.

GROUP #2:
Tandems and Batch Trucks, Mechanics, Dispatcher.

GROUP #3:
Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, and Agitator, Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Trucks.

GROUP #4:
Specialized Earth Moving Equipment, Euclid type, or similar off-highway,where not self-loading, Straddle (Ross) Carrier, and self-contained concrete mobile truck.

GROUP #5:
Off-highway Tandem Back-Dump, Twin Engine Equipment and Double-Hitched Equipment where not self-loading.

WAGES per hour	07/01/2021
Group #1	$ 32.65
Group #2	32.71
Group #3	32.80
Group #4	32.93
Group #5	33.09

Hazardous waste projects that require a Level C or greater protection shall be paid an additional $ 1.00 per hour.
All employees who work a single irregular work shift starting between 5pm and 1 am on governmental mandated night shifts shall be paid an additional $1.50 per hour.
For work bid on or after April 1, 1995, there shall be a 12 month carryover of the last posted rate in effect at the time of the bid.

** IMPORTANT NOTICE - EFFECTIVE 04/01/2009 **
Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Friday.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per hour:
$ 26.52
+$1.00 per*
hour worked

(*) not applicable to paid holidays

OVERTIME PAY
See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6) on HOLIDAY PAGE
Overtime: See (5, 6) on HOLIDAY PAGE

1-294h/h

Welder **10/01/2021**

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour 07/01/2021

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays
(S)	Two and one half times the hourly rate for Holidays

(S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.

(T) Triple the hourly rate for Holidays

(U) Four times the hourly rate for Holidays

(V) Including benefits at SAME PREMIUM as shown for overtime

(W) Time and one half for benefits on all overtime hours.

(X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12240

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone: ( ) Fax: ( )
E-Mail:

2. NY State Units (see Item 5)

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ check if new or change)
Name and complete address:

Telephone:( ) Fax: ( )
E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

- ☐ New Schedule of Wages and Supplements.
  APPROXIMATE BID DATE :
- ☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No. _____

6. Location of Project:
Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://applications.labor.ny.gov/EDList/searchPage.do

For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322

NYSDOL Bureau of Public Work Debarment List 09/24/2021

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AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	NYC	*****9839	A.J.S. PROJECT MANAGEMENT, INC.		149 FIFTH AVENUE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL	*****4018	ADIRONDACK BUILDING RESTORATION INC.		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	AG	*****1812	ADVANCED BUILDERS & LAND DEVELOPMENT, INC.		400 OSER AVE #2300HAUPPAUGE NY 11788	09/11/2019	09/11/2024
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC		AGOSTINHO TOME		405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	NYC		AMJAD NAZIR		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL		ANITA SALERNO		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	NYC		ANTHONY J SCLAFANI		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DOL		ARVINDER ATWAL		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	NYC	*****5532	ATWAL MECHANICALS, INC		65 KENNETH PLACE NEW HYDE PARK NY 11040	07/19/2017	07/19/2022
DOL	NYC	*****2591	AVI 212 INC.		260 CROPSEY AVENUE APT 11GBROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		BALWINDER SINGH		421 HUDSON ST SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	NYC	*****8416	BEAM CONSTRUCTION, INC.		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****4512	BOB BRUNO EXCAVATING, INC		5 MORNINGSIDE DR AUBURN NY 13021	05/28/2019	05/28/2024
DOL	DOL		BOGDAN MARKOVSKI		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****0225	C&D LAFACE CONSTRUCTION, INC.		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026

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DOL	NYC		CALVIN WALTERS		465 EAST THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCSO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARMEN RACHETTA		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	02/03/2025
DOL	DOL		CARMENA RACHETTA		8531 OSWEGO ROAD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTING AND CARMODY CONTRACTING CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		CHRISTOPHER PAPASTEFANOU A/K/A CHRIS PAPASTEFANOU		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****3228	CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC.	ROCKLAND TREE SERVICE	26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****2524	CSI ELECTRICAL & MECHANICAL INC		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	NYC		DALJIT KAUR BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL		DANICA IVANOSKI		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		DELPHI PAINTING & DECORATING CO INC		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DIMITRIOS TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL		DOMENICO LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023

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DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	NYC		DUARTE LOPES		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	NYC	*****4269	EAST PORT EXCAVATION & UTILITIES		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	NYC	*****5917	EPOCH ELECTRICAL, INC		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2024
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		FAIGY LOWINGER		11 MOUNTAIN RD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUEHARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	NYC		FRANK MAINI		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		GABRIEL FRASSETTI			04/10/2019	04/10/2024
DOL	DOL		GEOFF CORLETT		415 FLAGGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL		GIGI SCHNECKENBURGER		261 MILL RD EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		GIOVANNI LAFACE		8531 OSWEGO RD BALDWINSVILLE NY 13027	02/03/2020	01/09/2023
DOL	NYC	*****3164	GLOBE GATES INC	GLOBAL OVERHEAD DOORS	405 BARRETTO ST BRONX NY 10474	05/31/2018	05/31/2023
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC	*****3228	HEIGHTS ELEVATOR CORP.		1766 FRONT ST YORKTOWN HEIGHTS NY 10598	01/17/2018	01/17/2023
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		IRENE KASELIS		32 PENNINGTON AVE WALDWICK NJ 07463	05/30/2019	05/30/2024
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JAMES LIACONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026

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DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JIM PLAUGHER		17613 SANTE FE LINE ROAD WAYNEFIELD OH 45896	07/16/2021	07/16/2026
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN LUCIANO			05/14/2018	05/14/2023
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL RD P.O BOX 296EAST AURORA NY 14052	05/29/2019	05/29/2024
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL		JORI PEDERSEN		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	NYC		JOSEPH FOLEY		66-05 WOODHAVEN BLVD. STE 2REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOY MARTIN		2404 DELAWARE AVE NIGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	NYC		K.S. CONTRACTING CORP.		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022

DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DA	*****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023
DOL	AG	*****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL	*****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	*****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	NYC		MAREK FABIJANOWSKI		50 MAIN ST WHITE PLAINS NY 10606	01/04/2019	01/04/2024
DOL	NYC		MARTINE ALTER		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC		MATINA KARAGIANNIS		97-18 50TH AVE CORONA NY 11368	04/19/2018	04/19/2023
DOL	DOL		MATTHEW P. KILGORE		4156 WILSON ROAD EAST TABERG NY 13471	03/26/2019	03/26/2024
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		MCLEAN "MIKKI BEANE"		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN "MIKKI" DRAKE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MCLEAN M DRAKE-BEANE		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSIONAL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL	*****9445	MCLEAN M WALSH	ELITE PROFESSIONAL PAINTING OF CNY	1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023

NYSDOL Bureau of Public Work Debarment List 09/24/2021

Article 8

DOL	DOL	*****4829	MILESTONE ENVIRONMENTAL CORPORATION		704 GINESI DRIVE SUITE 29MORGANVILLE NJ 07751	04/10/2019	04/10/2024
DOL	NYC	*****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	*****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	NYC	*****3826	MOVING MAVEN OF NY, INC.		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	NYC	*****3550	MOVING MAVEN, INC		1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DA	*****9786	NATIONAL INSULATION & GC CORP		180 MILLER PLACE HICKSVILLE NY 11801	12/12/2018	12/12/2023
DOL	DOL	*****3684	NATIONAL LAWN SPRINKLERS, INC.		645 N BROADWAY WHITE PLAINS NY 10603	05/14/2018	05/14/2023
DOL	NYC		NICHOLAS FILIPAKIS		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTION, INC.	444 SCHANTZ ROAD ALLENTOWN PA 18104	09/17/2020	09/17/2025
DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC	*****0818	ONE TEN RESTORATION, INC.		2366 61ST ST BROOKLYN NY 11204	12/15/2016	12/15/2021
DOL	NYC		PARESH SHAH		29 PHILLIP DRIVE PARSIPPANY NJ 07054	02/13/2017	02/13/2022
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	NYC	*****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	NYC	*****5771	PMJ ELECTRICAL CORP		7113 FORT HAMILTON PARKWA BROOKLYN NY 11228	12/09/2016	12/09/2021
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC	*****4532	PROFESSIONAL PAVERS CORP.		66-05 WOODHAVEN BLVD. REGO PARK NY 11374	04/20/2017	04/20/2022
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023
DOL	AG	*****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOORMASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL	*****9148	RICH T CONSTRUCTION		107 WILLOW WOOD LANE CAMILLUS NY 13031	11/13/2018	11/13/2023
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023

DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL	*****9148	RICHARD TIMIAN	RICH T CONSTRUCTION	108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	10/16/2018	10/16/2023
DOL	DOL		RICHARD TIMIAN JR.		108 LAMONT AVE SYRACUSE NY 13209	11/13/2018	11/13/2023
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT A. VALERINO		3841 LANYARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL		ROBERT BRUNO		5 MORNINGSIDE DRIVE AUBURN NY 13021	05/28/2019	05/28/2024
DOL	NYC		ROBERT HOHMAN		149 FIFTH AVE NEW YORK NY 10010	12/29/2016	12/29/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****1365	S & L PAINTING, INC.		11 MOUNTAIN ROAD P.O BOX 408MONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****7730	S C MARTIN GROUP INC.		2404 DELAWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		SANDEEP BOPARAI		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	NYC	*****6597	SHAIRA CONSTRUCTION CORP.		421 HUDSON STREET SUITE C5NEW YORK NY 10014	02/20/2019	02/20/2024
DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		SHULEM LOWINGER		11 MOUNTAIN ROAD 28 VAN BUREN DRMONROE NY 10950	03/20/2019	03/20/2024
DOL	DOL	*****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****9933	STEED GENERAL CONTRACTORS, INC.		1445 COMMERCE AVE BRONX NY 10461	05/30/2019	05/30/2024
DOL	DOL	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		STEFANOS PAPASTEFANOU, JR. A/K/A STEVE PAPASTEFANOU, JR.		256 WEST SADDLE RIVER RD UPPER SADDLE RIVER NJ 07458	05/30/2019	05/30/2024

DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEVE TATE		415 FLAGER AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	NYC		STEVEN GOVERNALE		601 PORTION RD RONKONKOMA NY 11779	11/18/2016	11/18/2021
DOL	DOL		STEVEN MARTIN		2404 DELWARE AVE NIAGARA FALLS NY 14305	09/12/2018	09/12/2023
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	NYC	*****5863	SUKHMANY CONSTRUCTION, INC.		185-06 56TH AVE FRESH MEADOW NY 11365	10/17/2017	10/17/2022
DOL	DOL	*****1060	SUNN ENTERPRISES GROUP, LLC		370 W. PLEASANTVIEW AVE SUITE 2.329HACKENSACK NJ 07601	02/11/2019	02/11/2024
DOL	DOL	*****8209	SYRACUSE SCALES, INC.		158 SOLAR ST SYRACUSE NY 13204	01/07/2019	01/07/2024
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL		TEST		P.O BOX 123 ALBANY NY 12204	05/20/2020	05/20/2025
DOL	DOL	*****6789	TEST1000		P.O BOX 123 ALBANY NY 12044	03/01/2021	03/01/2026
DOL	DOL	*****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	12/04/2018	12/04/2023
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****8311	TRIPLE B FABRICATING, INC.		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL	*****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****7361	VIABLE HOLDINGS, INC.	MOVING MAVEN	1010 NORTHERN BLVD. GREAT NECK NY 11021	03/09/2017	03/09/2022
DOL	DOL		VICTOR ALICANTI		42-32 235TH ST DOUGLASTON NY 11363	01/14/2019	01/14/2024
DOL	NYC		VIKTAR PATONICH		2630 CROPSEY AVE BROOKLYN NY 11214	10/30/2018	10/30/2023
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	NYC	*****3673	WALTERS AND WALTERS, INC.		465 EAST AND THIRD ST MT. VERNON NY 10550	09/09/2019	09/09/2024
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****3296	WESTERN NEW YORK CONTRACTORS, INC.		3841 LAYNARD COURT NEW PORT RICHEY FL 34652	07/09/2019	07/09/2024
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM C WATKINS		1229 JAMES STREET SYRACUSE NY 13203	05/02/2017	05/02/2022
DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4730	XGD SYSTEMS, LLC	TDI GOLF	415 GLAGE AVE #302STUART FL 34994	10/31/2018	10/31/2023
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022

DOCUMENT 008010 – NEW YORK STATE CONTRACT PROVISIONS

The parties to the attached contract further agree to be bound by the following, which are hereby made a part of said contract:

1. Attached hereto is a copy of Appendix A to the contract between the State of New York and the OWNER (grantee). To the extent that clauses wherein which bind the OWNER (grantee) are related to the manner in which the work is prosecuted by the contractor(s), or the business relationships, business practices, or hiring practices of contractors or subcontractors working on this project, all of the terms and conditions of said Appendix A are equally binding upon the CONTRACTOR. Any provisions therein which appear to apply only to a contract between the State and its Contractor(s) shall be deemed revised to make them binding upon the CONTRACTOR, and any references to statutory provisions which apply only to State contracts shall be deemed to be revised to reference such other and different statutory provisions as may be applicable to municipal contracts for construction of public improvements; provided, that this paragraph shall not apply to any agreement with any supplier which is located in and subject to the laws of a State other than New York with respect to its relationships, business practices and hiring practices.

    a. The following provisions are not applicable: Paragraphs 3, 11, and 21.

END OF DOCUMENT 008010

EXCEPT FOR ABOVE REFERENCED ITEMS WHICH FOLLOW

SECTION 008010.1 - STANDARD CLAUSES FOR NYS CONTRACTS (Appendix A)

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "the contract" or "this contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State, whether a contractor, licenser, licensee, lessor, lessee or any other party):

1. EXECUTORY CLAUSE. In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. NON-ASSIGNMENT CLAUSE. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of the contracting agency and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. The State retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with the State. The Contractor may, however, assign its right to receive payments without the State's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. COMPTROLLER'S APPROVAL. In accordance with Section 112 of the State Finance Law (or, if this contract is with the State University or City University of New York, Section 355 or Section 6218 of the Education Law), if this contract exceeds $50,000 (or the minimum thresholds agreed to by the Office of the State Comptroller for certain S.U.N.Y. and C.U.N.Y. contracts), or if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $25,000, it shall not be valid, effective or binding upon the State until it has been approved by the State Comptroller and filed in his office. Comptroller's approval of contracts let by the Office of General Services is required when such contracts exceed $85,000 (State Finance Law § 163.6-a). However, such pre-approval shall not be required for any contract established as a centralized contract through the Office of General Services or for a purchase order or other transaction issued under such centralized contract.

4. WORKERS' COMPENSATION BENEFITS. In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. NON-DISCRIMINATION REQUIREMENTS. To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation.

6. WAGE AND HOURS PROVISIONS. If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28,

2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State approved sums due and owing for work done upon the project.

7. NON-COLLUSIVE BIDDING CERTIFICATION. In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to the State a non-collusive bidding certification on Contractor's behalf.

8. INTERNATIONAL BOYCOTT PROHIBITION. In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 et seq.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

9. SET-OFF RIGHTS. The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by the State agency, its representatives, or the State Comptroller.

10. RECORDS. The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, the "Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as the agency or agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. The State shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate State official, in writing, that said records should not be disclosed; and (ii) said records shall be sufficiently identified; and (iii) designation of said records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, the State's right to discovery in any pending or future litigation.

11. IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION. (a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to a New York State agency by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of the agency contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street, Albany, New York 12236.

12. EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN. In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of $100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgradings, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at the request of the contracting agency, the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and (c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "a," "b," and "c" above, in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or subcontractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. The contracting agency shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, the contracting agency shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. CONFLICTING TERMS. In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Appendix A, the terms of this Appendix A shall control.

14. GOVERNING LAW. This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. LATE PAYMENT. Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. NO ARBITRATION. Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. SERVICE OF PROCESS. In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS. The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of Section 165 of the State Finance Law, (Use of Tropical Hardwoods) which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for

an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in § 165 State Finance Law. Any such use must meet with the approval of the State; otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. MACBRIDE FAIR EMPLOYMENT PRINCIPLES. In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992), the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165 of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. OMNIBUS PROCUREMENT ACT OF 1992. It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority- and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business
Albany, New York 12245
Telephone: 518-292-5100
Fax: 518-292-5884 email: opa@esd.ny.gov

A directory of certified minority- and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue
New York, NY 10017
212-803-2414
email: mwbecertification@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/VendorSearchPu blic.asp

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)–(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than $1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority- and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to the State;

(b) The Contractor has complied with the Federal Equal Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. RECIPROCITY AND SANCTIONS PROVISIONS. Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5))) require that they be denied contracts which they would otherwise obtain. NOTE: As of October 2019, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS. Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law § 899-aa and State Technology Law § 208) and commencing March 21, 2020 shall also comply with General Business Law § 899-bb.

23. COMPLIANCE WITH CONSULTANT DISCLOSURE LAW. If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental, health, and mental health services, accounting, auditing, paralegal, legal or similar services, then, in accordance with Section 163 (4)(g) of the State

Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to the agency that awarded the contract, the Department of Civil Service and the State Comptroller

24. PROCUREMENT LOBBYING. To the extent this agreement is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this agreement the contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the agreement by providing written notification to the Contractor in accordance with the terms of the agreement.

25. CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS. To the extent this agreement is a contract as defined by Tax Law § 5-a, if the contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or the covered agency, as defined by Tax Law § 5-a, discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the agreement, if the covered agency determines that such action is in the best interest of the State.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: https://ogs.ny.gov/list-entities-determined-be-non-responsive-biddersofferers-pursuant-nys-iran-divestment-act-2012

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

26. IRAN DIVESTMENT ACT. By entering into this Agreement, Contractor certifies in accordance with State Finance Law § 165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at: https://ogs.ny.gov/list-entities-determined-be-non-responsive-biddersofferers-pursuant-nys-iran-divestment-act-2012

Contractor further certifies that it will not utilize on this Contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this Contract, it must provide the same certification at the time the Contract is renewed or extended. Contractor also agrees that any proposed Assignee of this Contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the Contract, should the state agency receive information that a person (as defined in State Finance Law § 165-a) is in violation of the above-referenced certifications, the state agency will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then the state agency shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

The state agency reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

27. ADMISSIBILITY OF REPRODUCTION OF CONTRACT. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

END OF SECTION 008010.1

SECTION 009113 - ADDENDA

1.1 NOTICE TO BIDDERS

A. Addendum shall be issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

B. After Bid Opening and Contract Award, any addenda and modifications will be bound in this Project Manual immediately following this page.

END OF SECTION 009113

(Following to be completed after Bidding)

EXCEPT FOR ADDENDA AND MODIFICATIONS WHICH FOLLOW

MONTGOMERY
COUNTY NY
Made of Something Stronger

DIVISION 1

General Requirements

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Project information.
2. Work covered by Contract Documents.
3. Work performed by Owner.
4. Work under separate contracts.
5. Future work not part of this Project.
6. Owner's product purchase contracts.
7. Owner-furnished/Owner-installed (OFOI) products.
8. Contractor's use of site and premises.
9. Coordination with occupants.
10. Work restrictions.
11. Specification and Drawing conventions.
12. Miscellaneous provisions.

B. Related Requirements:
1. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
3. Section 017300 "Execution" for coordination of Owner-installed products.

1.3 PROJECT INFORMATION

A. Project Identification: **Montgomery County Health & Human Services**
1. Project Location: 1 Venner Road
Amsterdam, New York 12010.

B. Owner: Montgomery County
County Annex Building
P.O. Box 1500 – 20 Park Street
Fonda, New York 12068-1500

1. Owner’s Project Representative:
Eric M. Mead, Commissioner
Department of Public Works
6 Park Street - P.O. Box 1500
Fonda, NY 12068-1500
E-mail: emead@co.montgomery.ny.us
Tel: (518) 853-3814

C. Architect: Richard A. Campagnola, R.A.
C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture&Geology, DPC
50 Century Hill Drive, Latham, New York 12110
Tel. (518) 786-7400
Email: r.campagnola@ctmale.com

1. Structural Engineer: Christopher M. Shaver, P.E.
C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture, Landscape Architecture&Geology, DPC
50 Century Hill Drive, Latham, New York 12110
Tel. (518) 786-7400

D. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Mechanical Engineer: Jerry R. Young, P.E.
ERDMAN ANTHONY
11 Century Hill Drive, Suite 105 Latham, New York 12110
Tel. (518) 783-1205, ext. 1235

2. Plumbing Engineer: Clinton S. Hayduke, P.E.
ERDMAN ANTHONY
11 Century Hill Drive, Suite 105 Latham, New York 12110
Tel. (518) 783-1205, ext. 1205

3. Electrical Engineer: Bruce R. Wallman, P.E.
ERDMAN ANTHONY
145 Culver Road, Suite 200, Rochester, NY 14620
Tel. (585) 427-8888, ext. 1060

E. Project Coordinator for Multiple Contracts: The **Owner's Project Representative** shall serve as Project coordinator:

F. Project Web Site: A project Web site administered by the **Architect/Engineer** will be used for purposes of managing communication and documents during the construction stage.
1. See Section 013100 "Project Management and Coordination." for requirements for using the Project Web site.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:
1. Alterations to a portion of the existing building to accommodate the relocation of County office facilities, including the reconfiguration of space, the addition or elimination of interior doors and windows, the reconfiguration and extension of existing plumbing, mechanical and electrical systems, as well as the installation of additional equipment as described in the Contract Documents.
a. It is the policy of the State of New York that contracts for public works--defined as the erection, construction, reconstruction or alteration of buildings--be governed by certain requirements. The reason for these requirements is to assure the taxpayers of the prudent and economical use of public money and to ensure that the products purchased or the facility being built achieves maximum quality at the lowest possible cost as per General Municipal Law §100-a. The type of project and the cost of the purchase or project determine the procedures that are followed as per General Municipal Law §103.

2. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.
3. The Work generally includes alterations to a portion of the existing building, approximately 15,830 gross square feet in area, which was formerly occupied by the Recorder newspaper, to be used as office space, and includes the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve a similar purpose. The alteration Work also includes the reconfiguration of space, the addition or elimination of existing doors, the reconfiguration and extension of existing mechanical, electrical, and plumbing system, and the installation of additional equipment as indicated in the Contract Documents.
4. The **Owner's Project Representative** will be responsible for coordinating the Contractor's activities with the Work performed by the Owner and the Owner's vendors and other contractors, in accordance with the latest approved Project schedule. The Contractor shall supervise and direct their Work as required, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instruction concerning these matters.
5. The Contractor shall be totally responsible for periodic cleaning up of the building and premises daily. In addition to general broom cleaning, the Contractor shall remove all refuse, waste materials and debris of any kind regardless as to who may have left same. All such refuse shall be removed from the property of the Owner and disposed of in a legal manner to the end that at all times the building and premises shall present a neat, orderly and workmanlike appearance. The definition of "periodic" shall mean - "as necessary and/or at the direction of the Owner or his representative."
6. The Work will be deemed to be complete when it is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.
7. The Work shall be substantially complete, for occupancy and use by the Owner, within **240** calendar days, in Phases as described in the Bid Documents, and completed and ready for final payment within **270** days after the date when the contract time commences to run. Time limits stated in the Contract Documents are of the essence of the Contract

B. Americans with Disabilities Act Requirements
1. The Owner is fully committed to the Americans with Disabilities Act (the "ADA"), which guarantees non-discrimination and equal access for persons with disabilities in employment, public accommodations, transportation, and all programs, activities and services conducted by the Owner. The Owner's contractors, subcontractors, vendors, and/or suppliers are subject to this ADA policy. All persons and entities entering into contracts with the Owner are required to make the same commitment. By signing and submitting the enclosed Bid Form, each Bidder agrees to comply with the ADA in connection with its performance of any contract awarded hereunder.

C. Compliance with Laws; Permits, Fees and Notices:
1. The successful bidder shall be required to comply with all local, state and federal laws, rules, regulations and ordinances applicable to the Contract and to the services contemplated thereby.
   a. The successful bidder shall be required to obtain, at its expense, all permits, licenses and other authorizations necessary for the performance of the services, except that the Owner shall obtain, at its expense, a Building Permit required for completion of the Project.
   b. The successful bidder shall be responsible for giving all required notices and certifications, and for complying with all laws, ordinances, rules, regulations and directives of any public authority bearing on the performance of the work, regardless of whether those notices, certifications, laws, ordinances, rules, regulations and directives are expressly referenced in the Contract.
2. A complete description of the size, code classification for occupancy and construction type, and compliance criteria is included in the Code Compliance Plan and Analysis Drawing.

D. Type of Contract:
   1. Project will be constructed under coordinated, concurrent multiple contracts.
      a. See Section 011200 "Multiple Contract Summary" for a description of work included under each of the multiple contracts and for the responsibilities of the Owner's Project Representative to coordinate the work.
   2. Prime Contracts are separate contracts between the Owner and separate Contractors, representing significant construction activities. Each prime contract is performed concurrently with and closely coordinated with construction activities performed on the Project under other prime contracts. Prime contracts for this Project include:
      a. Contract No. 1 – General Construction
      b. Contract No. 2 – Plumbing
      c. Contract No. 3 – Mechanical (HVAC)
      d. Contract No. 4 – Electrical
      e. Contract No. 5 – Fire Suppression
   3. Definition of Extent of Prime Contract Work: The Contract Documents indicate the extent of each prime contract. Except where the Contract Documents contain a more specific description, general names and terminology on the Drawings and in the Specification Sections determine which prime contract includes a specific element of the Project.
      a. Local custom and trade-union jurisdictional settlements do not control the scope of Work included in each contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the affected prime contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.

1.5 WORK PERFORMED BY OWNER

A. Cooperate fully with Owner, so work may be carried out smoothly, without interfering with or delaying Work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

B. Preceding Work: **Owner** will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins.
   1. Demolition to the extent remaining as existing conditions shown on the Drawings.
   2. Salvage of existing vault door.
   3. New concrete sidewalks.
   4. Abatement of hazardous materials.

C. Concurrent Work: **Owner** will perform the following construction operations at Project site. Those operations will be conducted simultaneously with Work under this Contract.
   1. Property maintenance work.
   2. Asphalt pavement rehabilitation of parking lot.

D. Subsequent Work: **Owner** will perform the following additional work at site after Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.
   1. Alterations in adjoining future work areas.

1.6 WORK UNDER OWNER'S SEPARATE CONTRACTS

A. Work with Separate Contractors: Cooperate fully with Owner's separate contractors, so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under Owner's separate contracts.

B. Preceding Work: **Owner** has awarded or will award separate contract(s) for the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins..

C. Concurrent Work: **Owner** will award separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
1. Gas service relocation.
2. Fire alarm system.
3. Fiber-based communications network.
4. Access control system installation, configuration, and testing.
5. Video surveillance systems and security systems.

D. Subsequent Work: **Owner** will award separate contract(s) for the following additional work to be performed at site following Substantial Completion. Completion of that work will depend on successful completion of preparatory Work under this Contract.
1. Interior office cubicle partitions.
2. Future construction of alterations to adjoining work areas.

1.7 FUTURE WORK

A. The Contract Documents include requirements that will allow **Owner** to carry out future work following completion of this Project; provide for the following future work:
1. Cable tray and support system extension for future phases.
2. Temporary fire barrier construction between future phases.
3. Firestopping at penetrations in existing fire wall at adjoining unoccupied areas of building.

1.8 OWNER-FURNISHED/CONTRACTOR-INSTALLED (OFCI) PRODUCTS

A. Owner's Responsibilities: **Owner** will furnish products indicated and perform the following as applicable:
1. Provide to Contractor Owner-reviewed Product Data, Shop Drawings, and Samples.
2. Provide for delivery of Owner-furnished products to Project site.
3. Upon delivery, inspect, with Contractor present, delivered items.
    a. If Owner-furnished products are damaged, defective, or missing, arrange for replacement.
4. Obtain manufacturer's inspections, service, and warranties.
5. Inform Contractor of earliest available delivery date for Owner-furnished products.

B. Contractor's Responsibilities: The Work includes the following, as applicable:
1. Designate delivery dates of Owner-furnished products in Contractor's construction schedule, utilizing Owner-furnished earliest available delivery dates.
2. Review Owner-reviewed Product Data, Shop Drawings, and Samples, noting discrepancies and other issues in providing for Owner-furnished products in the Work.
3. Receive, unload, handle, store, protect, and install Owner-furnished products.
4. Make building services connections for Owner-furnished products.
5. Protect Owner-furnished products from damage during storage, handling, and installation and prior to Substantial Completion.
6. Repair or replace Owner-furnished products damaged following receipt.

C. Owner-Furnished/Contractor-Installed (OFCI) Products:
1. Fire extinguishers for fire extinguisher cabinets.
2. Carpet tiles in areas indicated on Drawings to be patched or to match existing.

1.9 OWNER-FURNISHED/OWNER-INSTALLED (OFOI) PRODUCTS

A. The **Owner** will furnish and install products indicated.

B. Owner-Furnished/Owner-Installed (OFOI) Products:
1. UPS power units/IT racks/Server equipment.
2. Time clocks.
3. Window treatments.
4. Residential appliances.
5. Furnishings, fixtures and equipment.

1.10 CONTRACTOR'S USE OF SITE AND PREMISES

A. Restricted Use of Site: **Each** Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Limits on Use of Site: Limit use of Project site to Work in areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Driveways, Walkways and Entrances: Keep driveways. parking garage, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times.
a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period.
1. Repair damage caused by construction operations.

D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.11 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will occupy portions of the premises outside the limits of the Work for limited purposes during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
2. Provide not less than [**72**] hours' notice to Owner of activities that will affect Owner's operations.

1.12 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
   1. Weekend Hours: Subject to Owner's restrictions on times permitted for weekend work.
   2. Early Morning Hours: Subject to regulations by authorities having jurisdiction for restrictions on noisy work.
   3. Except in an emergency, the employment of workers who work in excess of an eight-hour day and a five-day week is prohibited in accordance with Labor Law §220 (2).

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:
   1. Notify **Owner's Project Representative** not less than [**two**] business days in advance of proposed utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to adjoining property Owners.
   1. Notify **Owner's Project Representative** not less than [**two**] business days in advance of proposed disruptive operations.

E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on the Project site is not permitted.

F. Employee Identification: Provide identification, consisting of valid driver's license and a form acceptable to the Owner for Contractor personnel working on Project site. Require personnel to carry identification at all times.

1.13 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
   1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
   2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
   3. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
   1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
   2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
   3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 011000

NOTICE TO PROCEED

Project: MONTGOMERY COUNTY Health&Human Services
1 Venner Road, Amsterdam, New York 12010

Date: _____

A/E Project Number: 20.0651

To: _____

Contract For: _____

Bid # 16-21

You are hereby notified that the Contract Times stated for the Project will commence on _____ . On that date, start performing the obligations required by the Contract Documents.
(Date)

Before commencing Work at the Project Site, deliver the certificates of insurance to the Owner as required by the Contract Documents.

Also before commencing Work at the Project Site, perform:

1. Submit a start-up horizontal bar-chart-type construction schedule within ten (10) days of date established for the Notice to Proceed.
2. Submit a final subcontract list, including the name, address and telephone number for this entities performing the work.
3. Submit a a list of key personnel assignments, including superintendent and other personnel in attendance at Project site.
4. Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Promptly review, approve in writing, and submit to the Architect/Engineer shop drawings, product data, samples, and similar submittals required by the Contract Documents.
5. Submit a final schedule of values to Architect/Engineer at earliest possible date but no later than [7] seven days before the date scheduled for submittal of initial Applications for Payment. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

Authorized By: Montgomery County
(Owner)

_____
(Authorized Signature)

_____
(Title)

Accepted By: _____
(Contractor)

_____
(Authorized Signature)

_____
(Title)

_____
(Date)

☐ Attachments

Copies: ☒Owner ☒A/E ☒Consultants ☐_____ ☐_____ ☐_____ ☒ File

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110 South Union St., Suite 100, Alexandria, VA 22314

SECTION 011200 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls. Each Prime Contract is defined as follows:
   1. Contract No. 1 – General Construction
   2. Contract No. 2 – Plumbing
   3. Contract No. 3 – Mechanical (HVAC)
   4. Contract No. 4 – Electrical
   5. Contract No. 5 – Fire Suppression

B. One set of Contract Documents is issued covering all multiple contracts. Specific requirements for work of each contract are also indicated in individual Specification Sections and on Drawings.
   1. Each Prime Contract is responsible to review all drawings and specifications for specific requirements indicated and for a general understanding and knowledge of the work of each other Prime Contract.

C. Related Requirements:
   1. Section 011000 "Summary" for the Work covered by the Contract Documents, restrictions on use of Project site, coordination with Work performed by Owner, and work restrictions.
   2. Section 013100 "Project Management and Coordination" for general coordination requirements.
   3. Section 013200 "Construction Progress Documentation" for construction schedule coordination.
   4. Section 015000 "Temporary Facilities and Controls" for specific requirements assigned to each contract for temporary facilities and controls.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, the condition at which building envelope is weathertight; and openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.4 PROJECT COORDINATOR

A. The **Owner's Project Representative** shall serve as the Project coordinator.
   1. Project coordinator shall be responsible for coordination between the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

B. Owner may retain a scheduling consultant to coordinate the scheduling activities of the multiple contracts, and to monitor and update Project schedule periodically.
   1. Each Contractor shall cooperate with and coordinate its scheduling activities with Owner's scheduling consultant.

1.5 PROJECT COORDINATOR RESPONSIBILITIES

A. Project coordinator shall perform Project coordination activities for the multiple contracts, including, but not limited to, the following:
   1. Provide typical overall coordination of the Work.
   2. Coordinate shared access to workspaces.
   3. Coordinate product selections for compatibility.
   4. Provide overall coordination of temporary facilities and controls.
   5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
   6. Coordinate construction and operations of the Work with work performed by each Contract and Owner's construction forces.
   7. Coordinate assembly of coordination drawings in collaboration with each contractor to coordinate work by more than one contract.
      a. **Each Prime Contractor** shall be responsible for integration of combined coordination drawings submitted through the **Owner's Project Representative**.
   8. Coordinate sequencing and scheduling of the Work. Include the following:
      a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
      b. Coordinate combined Contractors' Construction Schedule for entire Project prepared by **General Construction Contractor** based on preliminary construction schedule. Secure time commitments for performing critical construction activities from each contractor in conjunction with individual construction schedules submitted. Prepare a simplified summary sheet indicating combined construction activities of contracts.
         1) Submit schedules for approval.
         2) Distribute copies of approved schedules to contractors.
   9. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
   10. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
   11. Coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
   12. Coordinate cutting and patching.
   13. Coordinate protection of the Work.
   14. Coordinate firestopping.
   15. Coordinate completion of interrelated punch list items.
   16. Review coordination drawings **prepared by each Prime Contractor** where required to coordinate Work by more than one contract.
      a. Each Prime Contractor shall be responsible for assembling coordination drawings submitted for review and distribution by the **Owner's Project Representative**.

B. Responsibilities of Project coordinator for temporary facilities and controls include, but are not limited to, the following:
   1. Coordination of temporary facilities and controls of all Prime Contracts and the Owner.
   2. Designate area within existing building for common-use field office for use by all personnel engaged in construction activities.

1.6 GENERAL REQUIREMENTS OF CONTRACTS

A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.

1. Unless otherwise indicated, the work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
2. Local custom and trade-union jurisdictional settlements do not control the scope of the Work of each contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, affected contractors shall negotiate a reasonable settlement to avoid or minimize interruption and delays.
3. Trenches and other excavation for the work of each contract shall be the work of **each contract for its own work**.
4. Blocking, backing panels, sleeves, and metal fabrication supports for the work of each contract shall be the work of each contract for its own work.
5. Furnishing of access panels for the work of each contract shall be the work of each Prime Contract for its own work. Installation of access panels shall be by the **General Construction Contract**.
6. Equipment pads for the work of each contract shall be the work of **each contract for its own work**.
7. Roof-mounted equipment curbs for the work of each contract shall be the work of **each contract for its own work**.
8. Painting for the work of each contract shall be the work of **each contract for its own work**.
9. Cutting and Patching: **Each contract shall perform its own cutting; patching shall be under the General Construction Contract**.
10. Through-penetration firestopping for the work of each contract shall be provided by **each contract for its own work**.
11. Contractors' Preliminary Construction Schedule: each Prime Contractor, within [7] seven days after being awarded the Contract, shall submit for the Owner's and Architect's information, and the **Owner's Project Representative**'s review, a Contractor's Construction Schedule for the Work.
    a. Such schedule shall not exceed time limits current under the Contract Documents based upon the Preliminary Schedule prepared by the **Owner's Project Representative**, shall be revised at appropriate intervals as required by the conditions of the Work, shall be related to the entire Project construction schedule to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.
    b. Contractor's initial schedule submission shall take into account and allow time for Work items by other Prime Contractors, including sequencing of Work prior to, concurrent, and following the Work of the Prime Contractor.
    c. All Prime Contractor Schedules to be prepared using Horizontal Bar Chart Format, in format acceptable to Architect, submitted to **Owner's Project Representative** in digital form using Primavera P6 Professional or Microsoft Project.
12. Coordination drawings in format required under Section 013100 "Project Management and Coordination.
    a. Coordination Drawings submitted to the **Owner's Project Representative** other than in the required formats shall be rejected by the Architect/Engineer.
13. Tests and inspections not explicitly assigned to Owner, including, but not limited to, additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

B. Substitutions: Each Prime Contractor shall be responsible for coordinating any changes to the Work of other Prime Contractors, which is affected by the submission and/or approval of substitutions.
   1. **Owner's Project Representative** shall coordinate substitutions for submission to Architect/Engineer.

C. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Section 015000 "Temporary Facilities and Controls," each Prime Contractor is responsible for the following:
   1. Installation, operation, maintenance, and removal of each temporary facility necessary for its own normal construction activity, and costs and use charges associated with each facility.
   2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.

3. Its own field office, complete with necessary furniture, utilities, and telephone service.
4. Its own storage and fabrication sheds.
5. Temporary enclosures for its own construction activities.
6. Staging and scaffolding for its own construction activities.
7. General hoisting facilities for its own construction activities, up to 2 tons.
8. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
9. Progress cleaning of work areas affected by its operations on a daily basis.
10. Secure lockup of its own tools, materials, and equipment.
11. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

D. Temporary Heating, Cooling, and Ventilation: The **HVAC Contract** is responsible for temporary heating, cooling, and ventilation, including temporary connections and **Owner** will pay utility-use charges.
1. Use of permanent heating system for temporary heating or humidity control purposes, following permanent enclosure only after all dust generating activities are complete, shall be permitted upon authorization of the Owner and Architect/Engineer.
2. Use of the permanent system shall not modify the effective date, or void, the warranty of the permanent system. If approved, Mechanical (HVAC) Contract shall provide filter with MERV of 8 at each return air grille in system and remove at end of construction and clean HVAC system as required in Division 01 Section "Closeout Procedures".

E. Use Charges: Comply with the following:
1. Water Service: The cost for water service, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site will be paid by the **Owner** upon installation and acceptance of permanent service to the building.
2. Electric Power Service: The cost for electric power service for electricity used by all entities engaged in construction activities at Project site will be paid by the **Owner**.
3. Gas Service: The cost for gas service, whether metered or otherwise, used by all entities engaged in construction activities at Project site will be paid by the **Owner**.

1.7 GENERAL CONSTRUCTION CONTRACT

A. Work in the General Construction Contract includes, but is not limited to, the following:
1. Remaining work not identified as Work under other contracts.
2. Selective demolition of portions of existing building.
3. Maintenance of cast-in-place concrete including gypsum cement underlayment.
4. Cast-in-place concrete for infilling openings in existing floor/ceiling assemblies, including steel decking and metal fabrications.
5. Unit masonry restoration, including metal fabrications for support of new masonry openings.
6. Rough carpentry and blocking for furnishings, fixtures and equipment provided by Owner which are built into the Work.
7. Plastic-laminate-faced architectural cabinets and wood paneling, with solid surfacing countertops.
8. Interior building insulation, including sound batts at non-bearing studwall wall cavities.
9. Penetration and joint firestopping at existing fire barriers.
10. Interior joint sealants, including, but not limited to acoustical sealants, and joint sealants at adjoining dissimilar surfaces.
11. Hollow metal doors, frames, interior glazed openings, and hardware, including integrated access control hardware devices and coordination with Owner’s security vendor.
12. Exterior closure, including aluminum storefronts and replacement of exterior doors within existing metal frames.
13. Access doors and frames for walls that conceal existing plumbing cleanout and valve locations.
14. Non-structural metal framing including new partitions and furring at existing masonry walls.

15. Cement plastering repairs to existing masonry wall finishes.
16. Interior gypsum board wall and ceiling finishes.
17. Acoustical panel ceilings and suspension systems
18. Interior floor finishes, including ceramic tile, carpet tile, resilient flooring and base.
19. Interior and exterior painting.
20. Exterior dimensional lettering and signage.
21. Panel signage and room identification panel signage.
22. Toilet compartments.
23. Wall and door protection.
24. Toilet, bath and janitorial accessories not otherwise provided with fixtures by Plumbing Contract.
25. Fire extinguisher cabinets.
26. Entrance floor mats and frames

B. Temporary facilities and controls in the General Construction Contract include, but are not limited to, the following:
1. Temporary facilities and controls that are not otherwise specifically assigned to other Prime Contractors and Owner.
2. Project identification and temporary signs.
3. Unpiped temporary toilet fixtures, wash facilities, and drinking water facilities, including disposable supplies.
4. General waste disposal facilities for all Prime Contractors.
5. Common-use field office for use by **Owner's Project Representative** and all personnel engaged in construction activities.
6. Temporary enclosure for building exterior, except as indicated.
7. Temporary fire-protection equipment.
8. Pest control.
9. Maintenance and restoration of Owner's existing facilities used as temporary facilities.

1.8 PLUMBING CONTRACT

A. In addition to Divisions 21 and 22, Work in the Plumbing Contract includes, but is not limited to, the following:
1. Utility coordination and attaining necessary service orders and/or permits form the Authorities having Jurisdiction.
2. Selective demolition for plumbing, including cutting and patching of cast-in-place concrete slab.
3. Meters and gauges for plumbing piping .
4. General-duty valves for plumbing piping.
5. Hangers and supports for plumbing piping and equipment.
6. Identification for plumbing piping and equipment.
7. Plumbing piping insulation.
8. Plumbing piping.
9. Plumbing piping specialties.
10. Plumbing equipment.
11. Plumbing fixtures.
12. Plumbing connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

B. Temporary facilities and controls in the Plumbing Contract include, but are not limited to, the following:
1. Piped water service.
2. Sanitizing lines, as applicable.
3. Plumbing connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

1.9 MECHANICAL (HVAC) CONTRACT

A. In addition to Divisions 23, Work in the Mechanical Contract includes, but is not limited to, the following:
   1. Selective demolition for HVAC.
   2. HVAC air-distribution system cleaning.
   3. Hangers and supports for HVAC piping and equipment.
   4. Identification for HVAC piping and equipment.
   5. Testing, adjusting, and balancing for HVAC.
   6. Duct insulation.
   7. HVAC piping insulation.
   8. Refrigerant piping.
   9. HVAC ducts and casings.
   10. Air duct accessories.
   11. Air outlets and inlets.
   12. Air cooled refrigerant condensers.
   13. Computer room air conditioners – floor mounted.
   14. Power path and conductors for mechanical equipment not specifically indicated in the Contract Documents or otherwise provided by the Electrical Contractor.
   15. Mechanical connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

B. Temporary facilities and controls in the Mechanical Contract include, but are not limited to, the following:
   1. Temporary heating, cooling, and ventilation.
   2. Protection of permanent HVAC system when use for temporary heating or humidity control purposes is authorized by the Owner and Architect/Engineer through the **Owner's Project Representative** following permanent enclosure only after all dust generating activities are complete.
      a. Mechanical (HVAC) Contractor shall clean system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures".
   3. Mechanical connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

1.10 ELECTRICAL CONTRACT

A. In addition to Divisions 26 and 27, Work in the Electrical Contract includes, but is not limited to, the following:
   1. Selective demolition for electrical.
   2. Low-voltage electrical power conductors and cables.
   3. Under carpet electrical power cables.
   4. Grounding and bonding for electrical systems
   5. Hangers and supports for electrical systems
   6. Conduit for electrical systems
   7. Boxes for electrical systems
   8. Surface raceways for electrical systems
   9. Cable trays for electrical systems.
   10. Identification for electrical systems.
   11. Wiring connections.
   12. Lighting control devices.
   13. Panelboards.
   14. Wiring devices.
   15. Enclosed switches

16. Enclosed controllers.
17. Interior lighting and exterior fixtures.
18. Structured cabling
19. Electrical connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

B. Temporary facilities and controls in the Electrical Contract include, but are not limited to, the following:
   1. Electric power service and distribution.
   2. Lighting, including maintenance of existing temporary lighting provided by Owner.
   3. Supplemental task lighting, as may be required to complete the Work beyond the temporary lighting levels that have been provided.
   4. Electrical connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

1.11 FIRE SUPPRESSION CONTRACT

A. In addition to Division 21, Work in the Fire Suppression Contract includes, but is not limited to, the following:
   1. Selective demolition for fire suppression.
   2. Common work results for fire suppression.
   3. Fire-suppression sprinkler systems.
   4. Fire Suppression connections to equipment furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

B. Temporary facilities and controls in the Fire Suppression Contract include, but are not limited to, the following:
   1. Maintaining existing automatic sprinkler systems, including operation of sprinkler control valves.
   2. Fire Suppression Contract, connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing Contract, HVAC Contract, Electrical Contract, Fire Suppression Contract, and Owner's other contracts.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 011200

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:
1. Lump-sum allowances.
2. Unit-cost allowances.
3. Quantity allowances.
4. Contingency allowances.
5. Testing and inspecting allowances.

C. Related Sections:
1. Section 012200 "Unit Prices" for procedures for using unit prices, including adjustment of quantity allowances when applicable.
2. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
3. Section 014000 "Quality Requirements" for procedures governing the use of allowances for field testing by an independent testing agency.
4. Divisions 02 through 49 Sections for items of Work covered by allowances.

1.3 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.5 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Orders.

1.6 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.7 LUMP-SUM ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 UNIT-COST ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.9 QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
   1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.10 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.11 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of testing and inspection services not specifically required by the Contract Documents are Contractor responsibilities and are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.12 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
   1. Include installation costs in purchase amount only where indicated as part of the allowance.
   2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
   3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.

4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
   1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
   2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. General Construction Contract:
   1. Allowance No. 1: Lump Sum Allowance: Include a lump sum cost for a total of **[8] man man-hours** of labor and materials for painter to perform miscellaneous touch-up of work damaged by others or existing materials not part of the Work as directed by Architect prior to project closeout in accordance with Owner's instructions.
      a. This allowance includes material cost, receiving, handling, and installation, and Contractor overhead and profit.
   2. Allowance No. 2: Quantity Allowance: Include **100 liner feet** of repairing cracks in existing masonry walls for use according to Owner's instructions, as specified in Section 040120 "Unit Masonry Restoration."
      a. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
   3. Allowance No. 3: Contingency Allowance: Include the sum of **$25,000.00** for use according to Owner's instructions due to unforeseen conditions.
   4. Allowance No. 4: Testing and Inspection Allowance: Include the sum of **$2,500.00** for additional testing and inspections as requested by the Architect/Engineer in accordance with Owner's instructions.
      a. This allowance includes uncovering of portions of the Work, which the Architect/Engineer has not specifically requested to observe prior to its being covered, other than specific quality-assurance and -control requirements for individual construction activities as specified in the Sections that specify those activities performed as a responsibility of the Contractor, in accordance with Section 014000 "Quality Requirements."

B. Plumbing Contract:
   1. Allowance No. 1: Contingency Allowance: Include the sum of **$10,000.00** for use according to Owner's instructions due to unforeseen conditions.
   2. Allowance No. 2: Quantity Allowance: Include **100 liner feet** of replacement of existing water piping insulation for use according to Owner's instructions, as specified in Section 220719 "Plumbing Piping Insulation."
      a. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
   3. Allowance No. 3: Testing and Inspection Allowance: Include the sum of **$3,500.00** for additional CCTV pipe inspection and cleaning services of existing sanitary lines beyond the limits of work indicated as requested by Architect/Engineer in accordance with Owner's instructions.
      a. This allowance includes uncovering of portions of the Work, which the Architect/Engineer has not specifically requested to observe prior to its being covered, other than specific quality-assurance and -control requirements for individual construction activities as specified in the Sections that specify those activities performed as a responsibility of the Contractor, in accordance with Section 014000 "Quality Requirements."

C. Mechanical (HVAC) Contract:
   1. Allowance No. 1: Contingency Allowance: Include the sum of **$10,000.00** for use according to Owner's instructions due to unforeseen conditions.
   2. Allowance No. 2: Quantity Allowance: Include **100 liner feet** of replacement of existing duct insulation for use according to Owner's instructions, as specified in Section 230713 "Duct Insulation."
      a. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
   3. Allowance No. 2: Testing and Inspection Allowance: Include the sum of **$10,000.00** for Commissioning of existing HVAC equipment as requested by Architect/Engineer in accordance with Owner's instructions.
      a. This allowance includes uncovering of portions of the Work, which the Architect/Engineer has not specifically requested to observe prior to its being covered, other than specific quality-assurance and -control requirements for individual construction activities as specified in the Sections that specify those activities performed as a responsibility of the Contractor, in accordance with Section 014000 "Quality Requirements."

D. Electrical Contract:
   1. Allowance No. 1: Contingency Allowance: Include the sum of **$10,000.00** for use according to Owner's instructions due to unforeseen conditions.
   2. Allowance No. 2: Quantity Allowance: Include **200 l.f.** of EMT conduit for use according to Owner's instructions for miscellaneous systems and data wiring, as specified in Section 260533.13 “Conduit for Electrical Systems.”
      a. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
   3. Allowance No. 3: Testing and Inspection Allowance: Include the sum of **$5,000.00** for Arc Flash / Short Circuit Study and AF Warning Labels as requested by Architect/Engineer in accordance with Owner's instructions.
      a. This allowance includes uncovering of portions of the Work, which the Architect/Engineer has not specifically requested to observe prior to its being covered, other than specific quality-assurance and -control requirements for individual construction activities as specified in the Sections that specify those activities performed as a responsibility of the Contractor, in accordance with Section 014000 "Quality Requirements."

E. Fire Suppression Contract:
   1. Allowance No. 1: Contingency Allowance: Include the sum of **$5,000.00** for use according to Owner's instructions due to unforeseen conditions.

END OF SECTION 012100

ALLOWANCE AUTHORIZATION

Project: MONTGOMERY COUNTY Health & Human Services
1 Venner Road, Amsterdam, New York 12010

To:

Re:

Authorization Number:

From:

Date:

A/E Project Number: 20.0651

Contract For:

You are authorized to perform the following item(s) of work and to adjust the Allowance Sum accordingly:

Revisions to Drawing SF-101 Foundation Plan to accommodate loading requirements for anchor bolts based upon delegated design of pre-engineered timber column structure in accordance with Architect's Supplemental Instructions G710-04 as follows:

Additional anchor reinforcement required at Columns D, E, F, and K (10 locations only) at 8" foundation walls in Apparatus Bay as noted on the attached Submittal 131210.1 Plans - Drawing AS1. Provide additional reinforcement as shown on Revised Detail 2R/SF-101. Only additional reinforcement required is shown. Refer to Structural Drawings for typical foundation reinforcement required.

THIS IS NOT A CHANGE ORDER AND DOES NOT INCREASE OR DECREASE THE CONTRACT AMOUNT

Original Allowance	$	0.00
Allowance Expenditures prior to this Authorization	$	0.00
Allowance Balance prior to this Authorization	$	0.00
Allowance will be decreased by this Authorization	$	0.00
New Allowance Balance	$	0.00

APPROVAL RECOMMENDED

C.T. Male Associates
A/E

By Date

OWNER APPROVAL

Montgomery County
Owner

By Date

CONTRACTOR ACCEPTANCE

Contractor

By Date

☐ Attachments

Copies: ☒ Owner ☒ Contractor ☒ Consultants ☐ _____ ☐ _____ ☐ _____ ☒ File

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Form Version: October 2017
CSI Form 2.4A

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:
1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.
2. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
3. Section 014000 "Quality Requirements" for field testing by an independent testing agency.

1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES – CONTRACT NO. 1 GENERAL CONSTRUCTION

A. Unit Price No. 1: Removal of existing carpet tile and replacement with new carpet tile.
   1. Description: Remove existing carpet tiles in areas otherwise indicated on Drawings to remain, prepare existing concrete substrate, including trowelable leveling and patching compounds, and provide new modular carpet tile in accordance with Section 096813 “Tile Carpet.”
   2. Unit of Measurement: **square feet** of carpet tile.

B. Unit Price No. 2: Removal of existing 4” thick masonry walls.
   1. Description: Remove portions of existing 4” thick non-bearing concrete masonry unit walls to a height up to underside of roof deck, which are otherwise indicated to remain on the Drawings, where determined to be unstable by Architect/Engineer due to unforeseen conditions in accordance with Section 024119 “Selective Demolition”.
   2. Unit of Measurement: **square feet** of masonry wall removed.

C. Unit Price No. 3: Repairing and restoration of unit masonry wall cracks.
   1. Description: Major cracks shall be repaired and filled by pressure-injection grouting, including cutting, chipping, patching/restoring work, and cleaning in a manner to prevent damage to other work in accordance with Section 040120 “Unit Masonry Restoration” not otherwise indicated on the Drawings. All other cracks shall be repaired in the manner most appropriate and as required for stabilizing the existing wall or structure as directed by Architect/Engineer.
   2. Unit of Measurement: **linear feet** of masonry crack repairs.

D. Unit Price No. 4: Miscellaneous structural steel at existing unsupported masonry wall openings.
   1. Description: Miscellaneous lintels and other supports not otherwise indicated to be provided on the Drawings at new masonry openings, in accordance with Section 055000 "Metal Fabrications."
   2. Unit of Measurement: Cost in place of **pounds**, as indicated on itemized invoice of steel supplier.

3.2 SCHEDULE OF UNIT PRICES – CONTRACT NO. 2 PLUMBING

A. Unit Price No. 1: Removal and replacement of existing shutoff valves.
   1. Description: Drain piping and remove existing shutoff valves, which are found to be defective, and replace with new valve, as directed by Architect/Engineer in accordance with Section 220523 "General-Duty Valves for Plumbing Piping".
   2. Unit of Measurement: **Each** valve.

B. Unit Price No. 2: Removal and replacement of existing piping insulation.
   1. Description: Remove and replace portions of existing domestic water piping insulation, which are found to be deficient or otherwise missing, as directed by Architect/Engineer in accordance with Section 220719 "Plumbing Piping Insulation ".
   2. Unit of Measurement: **Linear foot** of piping.

C. Unit Price No. 3: Removal and replacement of existing floor drain.
   1. Description: Remove and replace existing floor drains, which are found to be defective, and replace with new floor drain, in accordance with Section 221006 "Plumbing Piping Specialties".
   2. Unit of Measurement: **Each** drain.

D. Unit Price No. 4: Cutting and patching of concrete slabs-on-grade.
   1. Description: Cutting of existing concrete slabs-on-grade up to **6 inches** thick, removal and excavation as required, and subsequent backfill, compaction, and patching of concrete not otherwise indicated on the Drawings in accordance with Section 017300 “Execution”.
   2. Unit of Measurement: **square feet** of concrete removed.

3.3 SCHEDULE OF UNIT PRICES – CONTRACT NO. 3 MECHANICAL (HVAC)

A. Unit Price No. 1: Removal and replacement of existing metal ductwork.
1. Description: Remove portion of existing HVAC ducts, which are found to be deficient as determined by Architect/Engineer, and replace with same or compatible ductwork material, in accordance with Section 233100 "HVAC Ducts and Casings".
2. Unit of Measurement: **Linear foot** of ductwork.

B. Unit Price No. 2: Removal and replacement of existing damper.
1. Description: Remove existing damper, which are found to be deficient as determined by Architect/Engineer, and replace with new damper, in accordance with Section 233300 "Air Duct Accessories".
2. Unit of Measurement: **Linear foot** of ductwork.

C. Unit Price No. 3: Removal and replacement of portions of existing ductwork insulation.
1. Description: Remove portion of existing ductwork insulation, which are found to be deficient as determined by Architect/Engineer, and replace with same or compatible duct insulation material, in accordance with Section 230713 "Duct Insulation".
2. Unit of Measurement: **Square foot** of insulation.

3.4 SCHEDULE OF UNIT PRICES – CONTRACT NO. 4 ELECTRICAL

A. Unit Price No. 1: Provide rigid metal electrical conduit.
1. Description: 1-inch galvanized rigid metal conduit (RMC), fittings and bodies, not otherwise indicated in the Contract Documents, in accordance with Section 260533.13 "Conduit for Electrical Systems".
2. Unit of Measurement: **Linear foot** of conduit.

B. Unit Price No. 2: Provide rigid non-metallic electrical conduit.
1. Description: ¾-inch rigid polyvinyl chloride conduit (PVC), fittings and bodies, not otherwise indicated in the Contract Documents, in accordance with Section 260533.13 "Conduit for Electrical Systems".
2. Unit of Measurement: **Linear foot** of conduit.

C. Unit Price No. 3: Provide electrical metallic tubing.
1. Description: ¾-inch electrical metallic tubing (EMT) and bodies, not otherwise indicated in the Contract Documents, in accordance with Section 260533.13 "Conduit for Electrical Systems".
2. Unit of Measurement: **Linear foot** of conduit.

3.5 SCHEDULE OF UNIT PRICES – CONTRACT NO. 5 FIRE SUPPRESSON

A. Unit Price No. 1: Remove and replace existing 1/2 to 1-1/2 inch pipe hangers and supports.
1. Description: Removal and replacement of existing pipe hangers and supports, which are found to be deficient as determined by Architect/Engineer, in accordance with Section 210500 "Common Work Results for Fire Suppression".
2. Unit of Measurement: **Each** hanger.

B. Unit Price No. 2: Remove and replace existing 2 inch and over pipe hangers and supports.
1. Description: Removal and replacement of existing pipe hangers and supports, which are found to be deficient as determined by Architect/Engineer, in accordance with Section 210500 "Common Work Results for Fire Suppression".
2. Unit of Measurement: **Each** hanger.

END OF SECTION 012200

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
   2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
   1. Include, as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other Work of the Contract.

C. Schedule: A Part 3 "Schedule of Alternates" Article is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. CONTRACT NO. 1 – GENERAL CONSTRUCTION:

1. ALTERNATE NO. 1:
   a. Provide metal doors with of prime finish and field-applied paint coating at all interior door openings, in lieu of, embossed wood grain with factory stained finish, in accordance with Section 081113 “Hollow Metal Doors and Frames” and Section 099123 “Interior Painting”.

2. ALTERNATE No. 2:
   a. Deduct Door 143B at Medicaid #1-143 in accordance with Section 081113 “Hollow Metal Doors and Frames,” and Hardware Set #17 in accordance with Section 080671 “Door Hardware Schedule,” including new opening in existing masonry wall as shown on Drawing S-101, and extend new wall finishes at adjoining Wall Type #46 as indicated on Drawings.

3. ALTERNATE NO. 3:
   a. Deduct Security Desk casework and countertops at Lobby 102 to be provided by Owner’s Furniture Vendor, in accordance with Section 064116 “Plastic-Laminate-Faced Architectural Cabinets and Section 123661 “Solid Surfacing Countertops”.

4. ALTERNATE NO. 4:
   a. Deduct dimensional lettering signage at existing canopy as shown on Detail 1/A-201, in accordance with Section 101419 “Dimensional Letter Signage”.

5. ALTERNATE NO. 5:
   a. Include removal and replacement of existing carpet tile at Child Support 114, in accordance with Section 096813 “Tile Carpeting”.

6. ALTERNATE NO. 6:
   a. Include removal and replacement of existing carpet tile at Eligibility-140, Office-141, Office-142, Medicaid #1-143 and Medicaid #2-144, in accordance with Section 096813 “Tile Carpeting”.

7. ALTERNATE NO. 7:
   a. Provide concrete fill of existing ductwork penetrations in Mezzanine floor assembly, including steel framing and supports as shown on Detail 5/S-101, in accordance with Section 033000 “Cast-in Place Concrete” and Section 055000 “Metal Fabrications”. Work to be coordinated with Mechanical Contract No. 3 provided under Alternate No. 1.

B. CONTRACT NO. 2 – PLUMBING:

1. ALTERNATE NO. 1:
   a. Provide 1-1/2” Reduced Pressure Zone Assembly (RPZ) in accordance with Construction Keyed Note 17, as shown on Drawings P-102 Plumbing Domestic Water Plan. RPZ to be Watts Model LF009 or equal. Include any changes required for piping to accommodate the new installation of a RPZ backflow preventer. Provide drain from RPZ to outside through existing wall.

2. ALTERNATE NO. 2:
   a. Relocate existing 3” sanitary riser indicated to remain at plumbing chase in Women’s Toilet Room 148 and provide wall-mounted flushometer toilet with narrow wall carrier (WC-2) in lieu of floor-mounted rear outlet flushometer toilet (WC-3), in accordance with Section 224000 “Plumbing Fixtures”.

3. ALTERNATE NO. 3:
   a. Deduct replacement of existing water closet and lavatory faucet, including supplies and trap, at Commissioner's Toilet Room 152, in accordance with Section 224000 "Plumbing Fixtures".

4. ALTERNATE NO. 4:
   a. Deduct replacement of existing water closet and wall hung lavatory, including supplies and trap, at Exec. Toilet Room 155, in accordance with Section 224000 "Plumbing Fixtures".

C. CONTRACT NO. 3 – MECHANICAL (HVAC):

1. ALTERNATE NO. 1:
   a. Remove remaining portions of existing 50"x20" RA and SA ductwork up to Penthouse, including existing fire damper at mezzanine floor openings, and cap below ceiling. Work to be coordinated with concrete infill of existing penetrations by General Construction Contract No. 1 provided under Alternate No. 7.

2. ALTERNATE NO. 2:
   a. Add application of antimicrobial agents and coatings if active fungal growth is determined by the IEP to be at Condition 2 or Condition 3 status according to IICRC S520, as analyzed by an accredited laboratory, and with results interpreted by an IEP, in accordance with Section 230130.51 "HVAC Air-Distribution System Cleaning".

3. ALTERNATE NO. 3:
   a. Provide removal and replacement of existing duct insulation indicated to remain, in accordance with Section 230713 "Duct Insulation".

D. CONTRACT NO. 4 – ELECTRICAL:

1. ALTERNATE NO. 1:
   a. Deduct low profile data floor fittings to be provided in accordance with Section 260519.13 "Undercarpet Electrical Power Cables" at Training/Recert 133.

2. ALTERNATE NO. 2:
   a. Deduct tele-power poles to be provided in accordance with Section 260533.23 "Surface Raceways for Electrical Systems", which are to be furnished by Owner's Furniture Vendor.

3. ALTERNATE NO. 3:
   a. Remove and replace existing wall mounted and toe-kick mounted receptacles (5-total) to be re-fed in Commissioner's Office 151 in accordance with Keyed Notes 22 and 23, as shown on Drawing E-200 Power Plan with new receptacles in accordance with Section 262726 "Wiring Devices".

E. CONTRACT NO. 5 – FIRE SUPPRESSION:

1. ALTERNATE NO. 1:
   a. Replace existing backflow preventer with an RPZ backflow preventer in accordance with Keyed Note1 on Drawing FP-101 Fire Protection First Floor Plan. Include any changes required for piping changes to accommodate the backflow preventer installation. Provide drain from RPZ to outside through existing wall.

END OF SECTION 012300

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
1. Document 002600 "Procurement Substitution Procedures" for requirements for substitution requests prior to award of Contract.
2. Section 012100 "Allowances" for products selected under an allowance.
3. Section 012300 "Alternates" for products selected under an alternate.
4. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
5. Divisions 02 through 49 Sections for specific requirements and limitations for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.
1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A sample included in Project Manual.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or other applicable code organization.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect/Engineer will request additional information or documentation for evaluation within **[7] seven** days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within **[15] fifteen** days of receipt of request, or **[7] seven** days of receipt of additional information or documentation, whichever is later.
   a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.
   1. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than **[15] fifteen** days prior to time required for preparation and review of related submittals.
   1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
      a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
      b. Substitution request is fully documented and properly submitted.

c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within **[30] thirty** days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012500

SUBSTITUTION REQUEST
(After the Bidding/Negotiating Phase)

Project: Montgomery County Health & Human Services
1 Venner Road, Amsterdam, New York 12010

To: C.T. Male Associates
50 Century Hill Drive, Latham, New York 12110

Re: _____

Substitution Request Number: _____

From: _____

Date: _____

A/E Project Number: 20.0651

Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐Drawings ☐Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

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SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND RECOMMENDATION

☐ Approve Substitution - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Approve Substitution as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Reject Substitution - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

OWNER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution rejected - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐Contractor ☐Subcontractor ☐Supplier ☐Manufacturer ☐A/E

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:
1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
2. Section 013100 "Project Management and Coordination" for requirements for forms for contract modifications provided as part of web-based Project management software.

1.3 MINOR CHANGES IN THE WORK

A. Architect/Engineer will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions" **AIA Document G710** form included in the Project Manual.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect/Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Work Change Proposal Requests issued by Architect/Engineer are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request, or **[10] ten** days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    e. Quotation Form: forms provided. Sample copies are included in Project Manual.
3. Work Change Proposal Request Form: AIA Document G709 for Proposal Requests.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect/Engineer.
   1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
   2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   4. Include costs of labor and supervision directly attributable to the change.
   5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
   6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
   7. Proposal Request Form: Use forms provided by Architect. Sample copies is included in Project Manual.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 form included in Project Manual.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 form included in Project Manual.
   1. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   2. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
   1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012600

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AIA® Document G710™ – 2017

Architect's Supplemental Instructions

PROJECT: *(name and address)* Health & Human Services 1 Venner Road Amsterdam, New York 12010	**CONTRACT INFORMATION:** Contract For: Date:	**ASI INFORMATION:** ASI Number: 001 Date:
OWNER: *(name and address)* Montgomery County P.O. Box 1500 - 20 Park Street Fonda, NY 12068-1500	**ARCHITECT:** *(name and address)* C.T. Male Associates 50 Century Hill Drive Latham, NY 12110	**CONTRACTOR:** *(name and address)*

The Contractor shall carry out the Work in accordance with the following supplemental instructions without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgment that there will be no change in the Contract Sum or Contract Time.
(Insert a detailed description of the Architect's supplemental instructions and, if applicable, attach or reference specific exhibits.)

ISSUED BY THE ARCHITECT:

C.T. Male Associate
ARCHITECT *(Firm name)*

SIGNATURE

PRINTED NAME AND TITLE

DATE

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User Notes: (3B9AD9F6)

DRAFT

AIA® Document G709™ – 2001

Work Changes Proposal Request

PROJECT *(Name and address)*:
Health & Human Services
1 Venner Road
Amsterdam, New York 12010

OWNER *(Name and address)*:
Montgomery County
P.O. Box 1500 - 20 Park Street
Fonda, NY 12068-1500

FROM ARCHITECT *(Name and address)*:
C.T. Male Associates
50 Century Hill Drive
Latham, New York 12110

TO CONTRACTOR *(Name and address)*:

PROPOSAL REQUEST NUMBER: 001

DATE OF ISSUANCE:

CONTRACT FOR:

CONTRACT DATE:

ARCHITECT'S PROJECT NUMBER: 20.0651

OWNER: ☒
ARCHITECT: ☒
CONSULTANT: ☒
CONTRACTOR: ☒
FIELD: ☒
OTHER: ☐

Please submit an itemized proposal for changes in the Contract Sum and Contract Time for proposed modifications to the Contract Documents described herein. Within Zero (0) days, the Contractor must submit this proposal or notify the Architect, in writing, of the date on which proposal submission is anticipated.

THIS IS NOT A CHANGE ORDER, A CONSTRUCTION CHANGE DIRECTIVE OR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED IN THE PROPOSED MODIFICATIONS.

DESCRIPTION *(Insert a written description of the Work)*:

ATTACHMENTS *(List attached documents that support description)*:

REQUESTED BY THE ARCHITECT:

(Signature) _____ *(Printed name and title)* _____

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CHANGE ORDER REQUEST (PROPOSAL)

Project: Montgomery County Health & Human Services
1 Venner Road, Amsterdam, New York 12010

To: _____

_____

Re: _____

Change Order Request Number: _____

From (Contractor): _____

Date: _____

A/E Project Number: 20.0651

Contract For: _____

This Change Order Request (C.O.R.) contains an itemized quotation for changes in the Contract Sum or Contract Time in response to proposed modifications to the Contract Documents based on Proposal Request No. _____ .

Description of Proposed Change:

Attached supporting information from: ☐ Subcontractor ☐ Supplier ☐ _____ ☐ _____

Reason For Change:

Does Proposed Change involve a change in Contract Sum? ☐ No ☐ Yes [Increase] [Decrease] $ _____
Does Proposed Change involve a change in Contract Time? ☐ No ☐ Yes [Increase] [Decrease] days. _____

Attached pages: ☐ Proposal Worksheet Summary: _____
☐ Proposal Worksheet Detail(s): _____

Signed by: Date:

Copies: ☐ Owner ☐ Consultants ☐_____ ☐_____ ☐_____ ☐_____ ☐ File

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Form Version: October 2017
CSI Form 13.6A

CHANGE ORDER REQUEST LOG

Project: Montgomery County Health & Human Services A/E Project Number: 20.0651

Owner: Montgomery County Contractor:

C.O.R. NO.	DATE REC'D	R.F.P. NO.	BRIEF DESCRIPTION OF PROPOSED CHANGE	DATE ISSUED	C.O. NO.

PROPOSAL
WORKSHEET DETAIL

Project: Montgomery County Health & Human Services

Change Order Request Number:

To: CT. Male Associates

From:

Contact:

Re:

Date:

Proposal Request Number:

A/E Project Number: 20.0651

SHADED AREAS FOR A/E USE

ADDITIONS

	Ref. No.	Item Description	Quantity		UNIT PRICES Materials		UNIT PRICES Labor		SUBTOTALS Materials		SUBTOTALS Labor		TOTAL	
1														
2														
3														
4														
Subtotal (Enter this number on Worksheet Summary.														

DEDUCTIONS

	Ref. No.	Item Description	Quantity		UNIT PRICES Materials		UNIT PRICES Labor		SUBTOTALS Materials		SUBTOTALS Labor		TOTAL	
1														
2														
3														
4														
Subtotal (Enter this number on Worksheet Summary.														

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Form Version: July 1994
CSI Form 13.6C

This is not an official CSI Construction Contract Administration (CCA) Form. Please use CSI's official CCA Forms if required by your project needs.

PROPOSAL
WORKSHEET SUMMARY

Project: Montgomery County Health&Human Services Change Order Request Number: _____

To: C.T. Male Associates From: _____

Re: _____ Date: _____

Proposal Request Number: _____ A/E Project Number: 20.0651

Complete and attach Proposal Worksheet Detail for each element of Work. Enter Worksheet Information below.

ADDITIONS:

	Sheet	Description	Material	Labor	Subtotal
1					
2					
3					
4					
5					
6					
7					
		Subtotal:			

DEDUCTIONS:

	Sheet	Description	Material	Labor	Subtotal
1					
2					
3					
4					
5					
6					
7					
		Subtotal:			

Subcontractor's Net:	
Subcontractor's OH&P:	
Subcontractor's Bond:	
Subcontractor's Total:	$ -
Contractor's OH&P:	
Contractor's Bond:	
Insurance:	
Tax:	
WORKSHEET TOTAL:	$ -

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DRAFT

AIA® Document G701™ – 2017

Change Order

PROJECT: *(Name and address)* Health & Human Services 1 Venner Road Amsterdam, New York 12010	**CONTRACT INFORMATION:** Contract For: Date:	**CHANGE ORDER INFORMATION:** Change Order Number: Date:
OWNER: *(Name and address)* Montgomery County P.O. Box 1500 - 20 Park Street Fonda, NY 12068-1500	**ARCHITECT:** *(Name and address)* C.T. Male Associates 50 Century Hill Dr., Latham, NY 12110	**CONTRACTOR:** *(Name and address)*

THE CONTRACT IS CHANGED AS FOLLOWS:
(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

The original Contract Sum was	$	0.00
The net change by previously authorized Change Orders	$	0.00
The Contract Sum prior to this Change Order was	$	0.00
The Contract Sum will be increased by this Change Order in the amount of	$	0.00
The new Contract Sum including this Change Order will be	$	0.00

The Contract Time will be increased by Zero (0) days.
The new date of Substantial Completion will be

NOTE: This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

C.T. Male Associates **ARCHITECT** *(Firm name)*	 **CONTRACTOR** *(Firm name)*	Montgomery County **OWNER** *(Firm name)*
SIGNATURE	**SIGNATURE**	**SIGNATURE**
PRINTED NAME AND TITLE	**PRINTED NAME AND TITLE**	**PRINTED NAME AND TITLE**
DATE	**DATE**	**DATE**

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User Notes: (3B9ADA15)

CHANGE ORDER LOG

Project: MONTGOMERY COUNTY Health & Human Services

A/E Project Number: 20.0651

Owner: Montgomery County

Contractor:

C.O. NO.	C.O. DATE	R.F.P. NO.	BRIEF DESCRIPTION OF CHANGE ORDER	CONTRACTOR		OWNER		STATUS (APP'D) (REJ'D)
				SENT	REC'D	SENT	REC'D	

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DRAFT

AIA® Document G714™ – 2017

Construction Change Directive

PROJECT: *(name and address)* Health & Human Services 1 Venner Road Amsterdam, New York 12010	**CONTRACT INFORMATION:** Contract For: Date:	**CCD INFORMATION:** Directive Number: 001 Date:
OWNER: *(name and address)* Montgomery County P.O. Box 1500 - 20 Park Street Fonda, NY 12068-1500	**ARCHITECT:** *(name and address)* C.T. Male Associates 50 Century Hill Drive Latham, NY 12110	**CONTRACTOR:** *(name and address)*

The Contractor is hereby directed to make the following change(s) in this Contract:
(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits.)

PROPOSED ADJUSTMENTS

1. The proposed basis of adjustment to the Contract Sum or Guaranteed Maximum Price is:

- ☐ Lump Sum of $
- ☐ Unit Price of $ per
- ☐ Cost, as defined below, plus the following fee:
  (Insert a definition of, or method for determining, cost)
- ☐ As follows:

2. The Contract Time is proposed to remain unchanged. The proposed adjustment, if any, is (0 days).

NOTE: The Owner, Architect and Contractor should execute a Change Order to supersede this Construction Change Directive to the extent they agree upon adjustments to the Contract Sum, Contract Time, or Guaranteed Maximum price for the change(s) described herein.

When signed by the Owner and Architect and received by the Contractor, this document becomes effective IMMEDIATELY as a Construction Change Directive (CCD), and the Contractor shall proceed with the change(s) described above.

Contractor signature indicates agreement with the proposed adjustments in Contract Sum and Contract Time set forth in this CCD.

C.T. Male Associates **ARCHITECT** *(Firm name)*	Montgomery County **OWNER** *(Firm name)*	**CONTRACTOR** *(Firm name)*
SIGNATURE	**SIGNATURE**	**SIGNATURE**
Richard A. Campagnola, R.A. Principal Architect **PRINTED NAME AND TITLE**	**PRINTED NAME AND TITLE**	**PRINTED NAME AND TITLE**
DATE	**DATE**	**DATE**

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SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:
1. Document 004473 "Proposed Schedule of Values Form" for requirements for furnishing proposed schedule of values following bid.
2. Section 012100 "Allowances" for procedural requirements governing the handling and processing of allowances.
3. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
4. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
5. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect through **Owner’s Project Representative** at earliest possible date but no later than **[7]** seven days before the date scheduled for submittal of initial Applications for Payment.
3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.
4. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values correlated with each element.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
a. Project name and location.
b. Owner's name.

c. Owner's Project number.
d. Name of Architect.
e. Architect's project number.
f. Contractor's name and address.
g. Date of submittal.

2. Arrange schedule of values consistent with format of **AIA Document G703** in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.
      1) Labor.
      2) Materials.
      3) Equipment.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents.
   a. Provide multiple line items for principal subcontract amounts in excess of **[5]** five percent of Contract Sum.
4. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. Where required, include evidence of insurance or bonded warehousing.
5. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity.
   a. Use information indicated in the Contract Documents to determine quantities.
6. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract.
   a. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
7. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
8. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling **[5]** five percent of the Contract Sum and subcontract amount.
9. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum or if further breakdown required to facilitate continued evaluation of Applications for Payment.
   a. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
   1. Submit draft copy of Application for Payment **[7]** seven days prior to due date for review by Architect.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.
   1. Other Application for Payment forms proposed by the Contractor shall not be acceptable to Architect and Owner.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
   1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
   2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
   3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
   4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
   1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
   2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
   3. Provide summary documentation for stored materials indicating the following:
      a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
      b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
      c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Submit **[3]** three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment, including subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit conditional final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
   4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work who is lawfully entitled to a lien.
   5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of subcontractors.
   2. Schedule of values.
   3. Contractor's construction schedule (preliminary if not final).
   4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
   5. Products list (preliminary if not final).
   6. Submittal schedule (preliminary if not final).
   7. List of Contractor's staff assignments.
   8. Copies of building permits.
   9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
   10. Initial progress report.
   11. Certificates of insurance and insurance policies.
   12. Performance and payment bonds.
   13. Data needed to acquire Owner's insurance.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
      a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."
   2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims" or equivalent Document provided by Owner, as described in the General Conditions.
   5. AIA Document G706A, "Contractor's Affidavit of Release of Liens" or equivalent Document provided by the Owner as described in the General Conditions.
   6. AIA Document G707, "Consent of Surety to Final Payment" or equivalent Document provided by the Owner as described in the General Conditions.
   7. Evidence that claims have been settled.
   8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
   9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 012900

DRAFT

AIA® Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:	Montgomery County County Annex Building PO Box 1500 - 20 Park Street Fonda, NY 12068-1500	**PROJECT:**	Health & Human Services 1 Venner Road Amsterdam, New York 12010	**APPLICATION NO:**	001
				PERIOD TO:	
				CONTRACT FOR:	
FROM CONTRACTOR:		**VIA ARCHITECT:**	C.T. Male Associates 50 Century Hill Drive Latham, NY 12110	**CONTRACT DATE:**	
				PROJECT NOS:	/ / 20.0651

Distribution to:

OWNER:	X
ARCHITECT:	X
CONTRACTOR:	X
FIELD:	X
OTHER:	

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM		$0.00
2. NET CHANGE BY CHANGE ORDERS		$0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)		$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)		$0.00
5. RETAINAGE:		
a. 0 % of Completed Work (Column D + E on G703: $0.00)=	$0.00	
b. 0 % of Stored Material (Column F on G703: $0.00)=	$0.00	
Total Retainage (Lines 5a + 5b or Total in Column I of G703)		$0.00
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)		$0.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)		$0.00
8. CURRENT PAYMENT DUE		$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	$0.00	

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$0.00	$0.00
Total approved this Month	$0.00	$0.00
TOTALS	$0.00	$0.00
NET CHANGES by Change Order		$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:

County of:

Subscribed and sworn to before me this day of

Notary Public:

My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

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User Notes:
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DRAFT

AIA® Document G703™ – 1992

Continuation Sheet

AIA Document, G702™–1992, Application and Certification for Payment, or G736™–2009, Project Application and Project Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:	001
APPLICATION DATE:	
PERIOD TO:	
ARCHITECT'S PROJECT NO:	20.0651

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
	GRAND TOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00%**	**0.00**	**0.00**

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. General coordination procedures.
   2. Administrative and supervisory personnel.
   3. Coordination drawings.
   4. Requests for Information (RFIs).
   5. Digital project management procedures.
   6. Project meetings.

B. Each contractor shall participate in coordination requirements through **Owner's Project Representative**.
   1. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:
   1. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
   2. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
   3. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   4. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Owner, Architect/Engineer, or Contractor seeking information from each other during construction.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A and include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Prior to starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site.

1. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
2. Post copies of list in project meeting room, in temporary field office, in web-based Project software directory, and in prominent location in built facility. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination of Multiple Contracts: Each contractor shall cooperate with **Owner's Project Representative,** who shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with operations included in different Sections that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.
   4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner, and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors and direction of **Owner's Project Representative** to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's construction schedule.
   2. Preparation of the schedule of values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.
   8. Startup and adjustment of systems.

1.6 ADMINSTRATIVE AND SUPERVISORY PERSONNEL

A. Project Site Superintendent: Each Prime Contractor shall provide a full-time on-site Project Site Superintendent while any Work related to this Contract is being performed on site, including the activities of their subcontractors, while other Prime Contracts are installing Work, or require the coordination of Work related to this Contract.
   1. Superintendent may be a Working Foreman as long as the daily requirements of the Contract are maintained, as they relate to the Construction Documents and the Project Schedule. The Construction Site Representative reserves the right to revoke this privilege if in their opinion these requirements are not maintained.

2. Superintendent shall participate in weekly meetings to schedule and coordinate the Work, in a manner that best promotes the Master Construction Schedule and the objectives of the Project.
3. Superintendent shall be able to make binding decisions on behalf of the Prime Contractor, as they relate to the daily activities of their crew, adjustments in Work scope, and achieving the goals of the Project.

B. Project Site Superintendent shall be an individual with minimum of five (5) years experience in this field of Work.
1. The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection.
2. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

C. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.7 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    f. Indicate required installation sequences.
    g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.

3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
   a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
   b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
   c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
   a. Runs of vertical and horizontal conduit 1-1/4 inch diameter and larger.
   b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
   c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
   d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire-Protection System: Show the following:
   a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Fire Alarm System: Show the following:
   a. Locations of alarm-initiating and notification appliances.
10. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility.
    a. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
11. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Section 013300 "Submittal Procedures."

C. Coordination Drawing Process: Prepare coordination drawings in the following manner:
1. Schedule submittal and review of Plumbing, HVAC, and Electrical Shop Drawings, in coordination with **Owner's Fire Sprinkler, Fire Alarm, and Security Installers**, to make required changes prior to preparation of coordination drawings.
2. Commence routing of coordination drawing files with HVAC Contractor, who will provide drawing plan files denoting approved ductwork. HVAC Contractor will locate ductwork and piping on a single layer, using orange color. Upon receipt, Architect/Engineer shall forward drawings to Plumbing Contractor.
3. Plumbing Contractor will locate plumbing and equipment on a single layer, using blue color. Upon receipt, Architect/Engineer shall forward drawing files to **Owner's Project Representative**, who shall forward to **Owner's Fire Sprinkler Installer**.
4. **Owner's Fire Sprinkler Installer** will locate piping and equipment, using red color. **Owner's Fire Sprinkler Installer** shall forward completed drawing files to Architect/Engineer through **Owner's Project Representative**. Upon receipt, Architect/Engineer shall forward drawing files to Electrical Contractor.
5. Electrical Contractor will indicate service and feeder conduit runs, cable trays and equipment in green color. Upon receipt, Architect/Engineer shall forward drawing files to **Owner's Project Representative**, who shall forward to **Owner's Fire Alarm Installer**.
6. **Owner's Fire Alarm Installer** will indicate conduit, cabling runs and equipment in purple color. **Owner's Fire Alarm Installer** shall forward completed drawing files to Architect/Engineer through **Owner's Project Representative**. Upon receipt, Architect/Engineer shall forward drawing files to **Owner's Electronic Safety and Security Installer**.
7. **Owner's Electronic Safety and Security Installer** will indicate cable trays and cabling runs and equipment in yellow color. **Owner's Electronic Safety and Security Installer** shall forward completed drawing files to Architect/Engineer through **Owner's Project Representative**.

8. Architect/Engineer shall perform the final coordination review. As each coordination drawing is completed, Contractor will meet with **Owner's Project Representative** to review and resolve conflicts on the coordination drawings.

D. Coordination Digital Data Files: Prepare coordination digital data files in accordance with the following requirements:
   1. File Preparation Format: Same digital data software program, version, and operating system as the original Drawings.
   2. Architect will furnish Contractor one set of digital data files of the Drawings for use in preparing coordination digital data files.
      a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to the Drawings.
      b. Each Contractor shall execute a data licensing agreement in the form of AIA Document C106, prepared by the Architect.

1.8 REQUESTS FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
   1. Architect/Engineer will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
   2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
   1. Project name.
   2. Owner name.
   3. Owner's Project number.
   4. Name of Architect/Engineer.
   5. Architect's Project number.
   6. Date.
   7. Name of Contractor.
   8. RFI number, numbered sequentially.
   9. RFI subject.
   10. Specification Section number and title and related paragraphs, as appropriate.
   11. Drawing number and detail references, as appropriate.
   12. Field dimensions and conditions, as appropriate.
   13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   14. Contractor's signature.
   15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
      a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716 form, a sample of which bound in the Project Manual.
   1. RFI Form will be submitted to Architect/Engineer in electronic draft format, which that can be edited and finalized by the Architect/Engineer.
   2. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect/Engineer will review each RFI, determine action required, and respond. Allow **[7] seven** working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
   1. The following RFIs will be returned without action:
      a. Requests for approval of submittals.
      b. Requests for approval of substitutions.
      c. Requests for approval of Contractor's means and methods.
      d. Requests for coordination information already indicated in the Contract Documents.
      e. Requests for adjustments in the Contract Time or the Contract Sum.
      f. Requests for interpretation of Architect's actions on submittals.
      g. Incomplete RFIs or inaccurately prepared RFIs.
   2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
   3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect/Engineer and **Owner's Project Representative** in writing within **[5] five** days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly with Application for Payment. Include the following:
   1. Project name.
   2. Name and address of Contractor.
   3. Name and address of Architect/Engineer.
   4. RFI number including RFIs that were dropped and not submitted.
   5. RFI description.
   6. Date the RFI was submitted.
   7. Date Architect's response was received.
   8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect/Engineer and **Owner's Project Representative** within **[7] seven** days if Contractor disagrees with response.
   1. Use CSI Log Form 13.2B, a sample of which bound in the Project Manual.

1.9 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect/Engineer for Contractor's use during construction.
   1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
   2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
   3. Digital Drawing Software Program: Contract Drawings are available in AutoCAD 2017 format.
   4. Contractor shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement acceptable to the Architect/Engineer.
      a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement acceptable to the Architect/Engineer.
   5. The following digital data files will be furnished for each appropriate discipline:
      a. Floor plans.
      b. Reflected ceiling plans.

B. Web-Based Project Software: Use Architect's web-based Project software site for purposes of hosting and managing Project communication and documentation until Final Completion.
   1. Web-based Project software site includes, at a minimum, the following features:
      a. Compilation of Project data, including Contractor, subcontractors, Architect/Engineer, Owner, and other entities involved in Project. Include names of individuals and contact information.
      b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
      c. Document workflow planning between project entities.
      d. Tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, and Supplemental Instructions.
      e. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
      f. Distributing meeting minutes.
      g. Document management for Drawings, Specifications, and coordination drawings, including revision control.
      h. Management of construction progress photographs and field reports.
      i. Project schedule.
   2. Architect's Transfer Site: The Architect/Engineer maintains a secure file transfer site to facilitate digital project management procedures over the Internet through a service called Onehub.
      a. The site is completely web-based, supporting browsers such as Internet Explorer or a recent version of Firefox.

C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
   1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
   2. Name file with submittal number or other unique identifier, including revision identifier.
   3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.10 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
   1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify **Owner's Project Representative** of scheduled meeting dates and times prior to a minimum of **[7] seven** working days meeting.
   2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
   3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.
      a. Use CSI Form 08-0A Meeting Minutes, a sample of which bound in the Project Manual, or a form acceptable to the Architect/Engineer and Owner.

B. Preconstruction Conference: **Owner's Project Representative** will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than **[15] fifteen** days after execution of the Agreement.
   1. Conduct the conference to review responsibilities and personnel assignments.
   2. Attendees: Authorized representatives of Owner, Architect/Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
   3. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long-lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Use of web-based Project software.
h. Procedures for processing field decisions and Change Orders.
i. Procedures for RFIs.
j. Procedures for testing and inspecting.
k. Procedures for processing Applications for Payment.
l. Distribution of the Contract Documents.
m. Submittal procedures.
n. Preparation of Record Documents.
o. Use of the premises and off-site Owner's facilities.
p. Work restrictions.
q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Construction waste management and recycling.
u. Disposal requirements for hauling excess fill materials off-site.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. Security.
z. Progress cleaning.

4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Each Contractor shall conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect/Engineer through **Owner's Project Representative**, and Owner's Special Inspector, if needed, of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
   a. Contract Documents.
   b. Options.
   c. Related RFIs.
   d. Related Change Orders.
   e. Purchases.
   f. Deliveries.
   g. Submittals.
   h. Review of mockups.
   i. Possible conflicts.
   j. Compatibility problems.
   k. Time schedules.
   l. Weather limitations.
   m. Manufacturer's written recommendations.
   n. Warranty requirements.
   o. Compatibility of materials.
   p. Acceptability of substrates.
   q. Temporary facilities and controls.
   r. Space and access limitations.
   s. Regulations of authorities having jurisdiction.

t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: **Owner's Project Representative** will schedule and conduct a Project closeout conference, at a time convenient to Owner and Architect/Engineer, but no later than **[15] fifteen** days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect/Engineer; Contractors and their superintendents; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Procedures for completing and archiving web-based Project software site data files.
d. Submittal of written warranties.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Coordination of separate contracts.
l. Owner's partial occupancy requirements.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: **Owner's Project Representative** will conduct progress meetings at monthly intervals.
1. Coordinate dates of meetings with preparation of monthly payment requests.
2. Attendees: In addition to Architect/Engineer and Owner, each Contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be

expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.
6) Access.
7) Site utilization.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Status of RFIs.
16) Status of proposal requests.
17) Pending changes.
18) Status of Change Orders.
19) Pending claims and disputes.
20) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to **Owner's Project Representative**, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each contractor present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
4) Deliveries.
5) Off-site fabrication.

6) Access.
7) Site use.
8) Temporary facilities and controls.
9) Work hours.
10) Hazards and risks.
11) Progress cleaning.
12) Quality and work standards.
13) Status of RFIs.
14) Proposal Requests.
15) Change Orders.
16) Pending changes.

3. Reporting: Entity responsible for conducting the meeting will record and distribute the meeting minutes to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013100

SUBCONTRACTORS AND MAJOR MATERIAL SUPPLIERS LIST

Project: MONTGOMERY COUNTY Health & Human Services
1 Venner Road, Amsterdam, New York 12010

To (A/E): C.T. Male Associates
50 Century Hill Drive, Latham, New York 12110

From (Contractor): _____

Date: _____

A/E Project Number: 20.0651

Contract For: _____

List Subcontractors and Major Material Suppliers proposed for use on this Project as required by the Construction Documents. Attach supplemental sheets if necessary.

Section Number	Section Title	Firm	Address	Phone Number (Fax Number)	Contact

☐ Attachments

Signed by: Date:

Copies: ☒Owner ☒ Consultants ☒ Architect ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☒ File

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Form Version: October 2017
CSI Form 1.5A

DRAFT

AIA® Document G716™ – 2004

Request for Information ("RFI")

TO:
C.T. Male Associates
50 Century Hill Drive
Latham, New York 12110

FROM:

PROJECT:
Montgomery County Health & Human Services
1 Venner Road, Amsterdam, New York 12010

ISSUE DATE:

RFI No. 001

REQUESTED REPLY DATE:

PROJECT NUMBERS: 20.0651 /

COPIES TO: OneHub/Owner's Representative

RFI DESCRIPTION: *(Fully describe the question or type of information requested.)*

REFERENCES/ATTACHMENTS: *(List specific documents researched when seeking the information requested.)*
SPECIFICATIONS: **DRAWINGS:** **OTHER:**

SENDER'S RECOMMENDATION: *(If RFI concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)*

RECEIVER'S REPLY: *(Provide answer to RFI, including cost and/or schedule considerations.)*

BY	DATE	COPIES TO

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

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This draft was produced by AIA software at 11:02:15 on 04/08/2015 under Order No.4692616055_1 which expires on 08/31/2015, and is not for resale.
User Notes: (1499948609)

REQUEST FOR INFORMATION LOG

Project: MONTGOMERY COUNTY Health & Human Services A/E Project Number: 20.0651

Owner: Montgomery County Contractor:

R.F.I. NO.	DATE REC'D	BRIEF DESCRIPTION OF INFORMATION REQUESTED	DATE OF RESPONSE	R.F.P. NO.

MEETING MINUTES

Project: MONTGOMERY COUNTY Health & Human Services

1 Venner Road, Amsterdam, New York 12010

Owner: _____

Re: _____

Report Number: _____

A/E Project Number: 20.0651

Meeting Location: _____

Meeting Date: _____ Time: _____

This confirms and records our interpretation of the discussions which occurred and our understanding reached during this meeting. Unless notified in writing within seven days of the date below, we will assume that the following interpretation or description is complete and accurate.

Participants:

Item	Description	Action By

☐ Attachments

Prepared by: Date:

Copies: ☒ Participants ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☒ File

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SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Startup construction schedule.
   2. Contractor's Construction Schedule.
   3. Construction schedule updating reports.
   4. Daily construction reports.
   5. Material location reports.
   6. Site condition reports.
   7. Unusual event reports.

B. Related Requirements:
   1. Section 011200 "Multiple Contract Summary" for preparing a combined Contractor's Construction Schedule.
   2. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.
   3. Section 013300 "Submittal Procedures" for submitting schedules and reports.
   4. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Architect.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of the Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.
1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:
1. Working electronic copy of schedule file.
2. PDF file.

B. Startup construction schedule.
1. Submittal of cost-loaded startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

D. Reports: Concurrent with schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
1. Activity Report: List of activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for each activity, sorted in ascending order by activity number and then by early start date, or actual start date if known.

E. Construction Schedule Updating Reports: Submit with Applications for Payment.

F. Daily Construction Reports: Submit at weekly intervals.

G. Material Location Reports: Submit at monthly intervals.

H. Site Condition Reports: Submit at time of discovery of differing conditions.

I. Unusual Event Reports: Submit at time of unusual event.

1.5 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from entities involved.

2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
   1. Schedules to be submitted in digital form in Primavera P6 Professional or Microsoft Project

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial and final completion.
   1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
   1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
   2. Procurement Activities: Include procurement process activities for all long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
   3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
   4. Startup and Testing Time: Include not less than **[7] seven** days for startup and testing.
   5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
   6. Punch List and Final Completion: Include not more than **[30] thirty** days for completion of punch list items and final completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
   1. Phasing: Arrange list of activities on schedule by phase.
   2. Work under More Than One Contract: Include a separate activity for each contract.
   3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
   4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
   5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
   6. Work Restrictions: Show the effect of the following items on the schedule:
      a. Coordination with existing construction.
      b. Limitations of continued occupancies.
      c. Uninterruptible services.
      d. Partial occupancy before Substantial Completion.
      e. Use of premises restrictions.
      f. Provisions for future construction.
      g. Seasonal variations.
      h. Environmental control.
   7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Submittals.
b. Purchases.
c. Mockups.
d. Fabrication.
e. Sample testing.
f. Deliveries.
g. Installation.
h. Tests and inspections.
i. Adjusting.
j. Curing.
k. Startup and placement into final use and operation.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
   a. Demolition.
   b. Temporary enclosure and space conditioning.
   c. Interior framing.
   d. Interior finishes.
   e. Completion of mechanical installation.
   f. Completion of electrical installation.
   g. Substantial Completion.
9. Other Constraints:
   a. Tests and Inspections.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion, and the following interim milestones:
1. Site Mobilization.
2. Demolition.
3. Interior Framing.
4. Plumbing Rough-in.
5. Mechanical Rough-in.
6. Electrical Rough-in.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is **[10] ten** or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.
1. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Architect/Engineer, **Owner's Project Representative**, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies to Project website.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 START-UP CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within **[7] seven** days of date established for commencement of the Work.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
   1. Outline significant construction activities for first **[90] ninety** days of construction.
   2. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.8 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's construction schedule within **[15] fifteen** days of date established for commencement of the Work.
   1. Base schedule on the Preliminary construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
   1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in [10] ten percent increments within time bar.

1.9 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

   1. List of subcontractors at Project site.
   2. List of separate contractors at Project site.
   3. Approximate count of personnel at Project site.
   4. Equipment at Project site.
   5. Material deliveries.
   6. High and low temperatures and general weather conditions, including presence of rain or snow.
   7. Testing and inspection.
   8. Accidents.
   9. Meetings and significant decisions.
   10. Unusual events.
   11. Stoppages, delays, shortages, and losses.
   12. Meter readings and similar recordings.
   13. Emergency procedures.
   14. Orders and requests of authorities having jurisdiction.
   15. Change Orders received and implemented.

16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Material Location Reports: At **monthly** intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:
   1. Material stored prior to previous report and remaining in storage.
   2. Material stored prior to previous report and since removed from storage and installed.
   3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.
   1. Submit unusual event reports directly to Architect/Engineer and **Owner's Project Representative** within **[1] one** day of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013200

DAILY FIELD OBSERVATION REPORT

Project: MONTGOMERY COUNTY Health & Human Services Report Number: _____

Owner: Montgomery County Date: _____ Time: _____

Re: _____ A/E Project Number: 20.0651

Weather			Site Conditions		Day	
☐ Clear	☐ Snow	☐ Warm	☐ Clear	☐ Dusty	☐ Monday	☐ Thursday
☐ Overcast	☐ Foggy	☐ Hot	☐ Muddy	☐ _____	☐ Tuesday	☐ Friday
☐ Rain	☐ Cold	☐ _____	☐ Temperature Range _____		☐ Wednesday	☐ _____

Persons Contacted:

Work Observed:

Items Discussed:

Materials Delivered:

Requested Revisions or Interpretations:

Nonconforming Work Reported this Date to Contractor:

Remarks:

☐ Attachments

Signed by: Date:

Copies: ☒ Owner ☒ A/E ☒ Contractor ☒ Consultants ☐ _____ ☐ _____ ☒ File

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Knowledge for Creating and Sustaining the Built Environment

WEEKLY / MONTHLY PROGRESS REPORT

Project: MONTGOMERY COUNTY Health & Human Services

Owner: Montgomery County

Contractor: _____

Report Number: _____

Report Date: _____

A/E Project Number: 20.0651

Contract Completion Date/Time: _____

Date Construction Started: _____

Revised Completion Date: _____

Percent of Time Used: _____

Is Project on Schedule: _____

Approved Time Extensions (Days): _____

Contract Completion Date/Days: _____

Percent of Project Completion: _____

Days Elapsed: _____

If not, why? _____

Summary of Construction Activities Since Last Report:

☐Attachments

Signed by: Date:

Copies: ☒ Owner ☒ A/E ☒ Contractor ☒ Consultants ☐ _____ ☐ _____ ☒File

This is not an official CSI Construction Contract Administration (CCA) Form. Please use CSI's official CCA Forms if required by your project needs.

Knowledge for Creating
and Sustaining
the Built Environment

STORED MATERIAL SUMMARY

Project: MONTGOMERY COUNTY Health & Human Services

Application Period:

Owner: Montgomery County

Application Number:

A/E Project Number: 20.0651

Application Date:

INVOICE NO.	SUBMITTAL TRANSMITTAL NO.	MATERIAL DESCRIPTION	STORED PREVIOUS		STORED THIS MONTH		INCORPORATED IN WORK		
			DATE (MO/YR)	AMOUNT ($)	AMOUNT ($)	SUBTOTAL ($)	DATE (MO/YR)	AMOUNT ($)	MATERIALS REMAINING IN STORAGE ($)

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SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Submittal schedule requirements.
   2. Administrative and procedural requirements for submittals.

B. Related Requirements:
   1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
   2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
   3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
   4. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
   5. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
   6. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
   7. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
   8. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect/Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect/Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect/Engineer and additional time for handling and reviewing submittals required by those corrections.
   1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
   2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
      a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
   3. Format: Arrange the following information in a tabular format:
      a. Scheduled date for first submittal.
      b. Specification Section number and title.
      c. Submittal category: Action, informational.
      d. Name of subcontractor.
      e. Description of the Work covered.
      f. Scheduled date for Architect/Engineer's final release or approval.
      g. Scheduled dates for purchasing.
      h. Scheduled date of fabrication.
      i. Scheduled dates for installation.
      j. Activity or event number.

1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:
   1. Project name.
   2. Date.
   3. Name of Architect/Engineer.
   4. Name of Contractor.
   5. Name of firm or entity that prepared submittal.
   6. Names of subcontractor, manufacturer, and supplier.
   7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
   8. Category and type of submittal.
   9. Submittal purpose and description.
   10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
   11. Drawing number and detail references, as appropriate.
   12. Indication of full or partial submittal.
   13. Location(s) where product is to be installed, as appropriate.
   14. Other necessary identification.
   15. Remarks.
   16. Signature of transmitter.

B. Options: Identify options requiring selection by Architect/Engineer.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect/Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
   1. Transmittal for Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using CSI Form 12.1A submittal transmittal sample form included in Project Manual.
   2. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
   3. Provide a space approximately 3 by 5 inches to record Contractor's review and approval markings and action taken by Architect/Engineer.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
   1. Email: Prepare submittals as PDF package and transmit to Architect/Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect/Engineer.
      a. Architect/Engineer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
   2. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
   3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
   4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Architect/Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect/Engineer’s receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
   1. Initial Review: Allow **[10] ten** days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect/Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Resubmittal Review: Allow **[10] ten** days for review of each resubmittal.
   4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow **[15] fifteen** days for initial review of each submittal.
      a. Submittals requiring color or other finish selection by Owner.
      b. Submittals involving allowances included in Contract Documents.
   5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Owner or Owner's consultants, allow **[15] fifteen** days for review of each submittal. Submittal will be returned to Architect/Engineer before being returned to Contractor.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from Architect/Engineer's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.
   1. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect/Engineer's action stamp.

1.7 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
   3. Include the following information, as applicable:
      a. Manufacturer's catalog cuts.
      b. Manufacturer's product specifications.
      c. Standard color charts.
      d. Statement of compliance with specified referenced standards.
      e. Testing by recognized testing agency.
      f. Application of testing agency labels and seals.
      g. Notation of coordination requirements.
      h. Availability and delivery time information.
   4. For equipment, include the following in addition to the above, as applicable:
      a. Wiring diagrams that show factory-installed wiring.
      b. Printed performance curves.
      c. Operational range diagrams.
      d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
   5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Identification of products.
      b. Schedules.
      c. Compliance with specified standards.
      d. Notation of coordination requirements.
      e. Notation of dimensions established by field measurement.
      f. Relationship and attachment to adjoining construction clearly indicated.
      g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.
3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics, and identification information for record.
4. Web-Based Project Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
5. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
7. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    a. Number of Samples: Submit **[1] one** full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect/Engineer will return submittal with options selected.
8. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    a. Number of Samples: Submit **[3] three** sets of Samples. Architect/Engineer will retain **[2] two** Sample sets; remainder will be returned. One retained Sample set will remain as a project record Sample.
        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least **[3] three** sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.8 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect/Engineer.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and **[3] three** paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
   1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.9 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect/Engineer.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
   1. Architect/Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 ARCHITECT/ENGINEER’S REVIEW

A. Action Submittals: Architect/Engineer will review each submittal, indicate corrections or revisions required, and return it.
   1. PDF Submittals: Architect/Engineer will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Architect/Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect/Engineer will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect/Engineer will return without review or discard submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect/Engineer without action.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 013300

C.T. MALE ASSOCIATES

Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.
50 Century Hill Drive, Latham, NY 12110
Phone 518.786.7400 | Fax 518.786.7299 | Web www.ctmale.com

SUBMITTAL TRANSMITTAL

Project: MONTGOMERY COUNTY Health & Human Services Date: _____

1 Venner Road, Amsterdam, New York 12010 A/E Project Number: 20.0651

TRANSMITTAL A

To (Contractor): _____ Date: _____ Submittal No. _____

From (Subcontractor): _____ By: _____ ☐ Resubmission

Qty.	Reference / Number	Title / Description / Manufacturer	Spec. Section Title and Paragraph / Drawing Detail Reference

☐ Submitted for review and approval
☐ Resubmitted for review and approval
☐ Complies with contract requirements
☐ Will be available to meet construction schedule
☐ A/E review time included in construction schedule

☐ Substitution involved - Substitution request attached
☐ If substitution involved, submission includes point-by-point comparative data or preliminary details
☐ Items included in submission will be ordered immediately upon receipt of approval

Other remarks on above submission:

☐ One copy retained by sender

TRANSMITTAL B

To (A/E): C.T. Male Associates Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

☐ Approved
☐ Approved as noted

☐ Revise / Resubmit
☐ Rejected / Resubmit

Other remarks on above submission:

☐ One copy retained by sender

TRANSMITTAL C

To (Contractor): _____ Attn: _____ Date Rec'd by A/E: _____

From (A/E): C.T. Male Associates ☐ Other By: _____ Date Trnsmt'd by A/E: _____

☐ Approved
☐ Approved as noted
☐ Revise and Resubmit
☐ Rejected / Resubmit
☐ No action taken or required
☐ Not required for review
☐ Submission Incomplete / Resubmit

☐ Provide file copy with corrections identified
☐ Reproducible copies only returned

☐ Point-by-point comparative data required to complete approval process

Other remarks on above submission:

☐ One copy retained by sender

TRANSMITTAL D

To (Subcontractor): _____ Attn: _____ Date Rec'd by Contractor: _____

From (Contractor): _____ By: _____ Date Trnsmt'd by Contractor: _____

Copies: ☒ Owner ☒ Consultants ☐ _____ ☐ _____ ☐ _____ ☒One copy retained by sender

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110 S. Union St., Suite 100, Alexandria, VA 22314

Knowledge for Creating and Sustaining the Built Environment

SUBMITTAL LOG (Contractor)

Project: MONTGOMERY COUNTY Health & Human Services

Contractor Project Number: _____

Owner: Montgomery County

A/E: C.T. Male Associates, 50 Century Hilll Drive, Latham, New York 12110

SPEC SECTION NO.	NEW SUB	RE-SUBMIT	**ITEM DESCRIPTION**	SUBMITTAL NO.	SUBCON-TRACTOR/ SUPPLIER	DATE REC'D	**TO A/E**		DATE RET'D	**ACTION**						
							DATE SENT	DATE RET'D		APP'D	APP'D AS NOTED	NOT SUB'T TO REVIEW	NO ACTION REQ.	REVISE/ RESUB.	REJECT/ RESUB.	APP'D AS NOTED/ RESUB.

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110 South Union St., Suite 100, Alexandria, VA 22314

SECTION 013516 - ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes special procedures for alteration work.

B. Related Requirements:
   1. Section 017300 "Execution" for cutting and patching procedures.
   2. Section 024119 "Selective Demolition" for demolition and removal of selected portions of building or structure.

1.3 DEFINITIONS

A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.

B. Consolidate: To strengthen loose or deteriorated materials in place.

C. Design Reference Sample: A sample that represents the Architect/Engineer's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.

D. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect/Engineer.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

K. Retain: To keep an element or detail secure and intact.

L. Strip: To remove existing finish down to base material unless otherwise indicated.

1.4 COORDINATION

A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.
   1. Schedule construction operations in sequence required to obtain best Work results.
   2. Coordinate sequence of alteration work activities to accommodate the following:
      a. Owner's continuing occupancy of portions of existing building.
      b. Owner's partial occupancy of completed Work.
      c. Other known work in progress.
      d. Tests and inspections.
   3. Detail sequence of alteration work, with start and end dates.
   4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
   5. Use of stairs.

1.5 PROJECT MEETINGS FOR ALTERATION WORK

A. Preliminary Conference for Alteration Work: Before starting alteration work, conduct conference at Project site.
   1. Attendees: In addition to representatives of **Owner’s Project Representative**, Architect/Engineer, and Contractor(s), and demolition subcontractor(s) shall be represented at the meeting.
   2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:
      a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Fire-prevention plan.
      c. Governing regulations.
      d. Areas where existing construction is to remain and the required protection.
      e. Hauling routes.
      f. Sequence of alteration work operations.
      g. Storage, protection, and accounting for salvaged and specially fabricated items.
      h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
      i. Qualifications of personnel assigned to alteration work and assigned duties.
      j. Requirements for extent and quality of work, tolerances, and required clearances.
      k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.
   3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

1.6 MATERIALS OWNERSHIP

A. Historic items, equipment, and similar objects including, but not limited to, items of interest or value to Owner that may be encountered or uncovered during the Work, regardless of whether they were previously documented, remain Owner's property.

1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed at Project site.

1.7 INFORMATIONAL SUBMITTALS

A. Alteration Work Subschedule:
   1. Submit alteration work subschedule within **seven** [**7**] days of date established for commencement of alteration work.

B. Preconstruction Documentation: Identify preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.

C. Alteration Work Program: Submit before work begins.

D. Fire-Prevention Plan: Submit before work begins.

1.8 QUALITY ASSURANCE

A. Specialist Qualifications: An experienced firm regularly engaged in specialty work similar in nature, materials, design, and extent to alteration work as specified in each Section and that has completed a minimum of [**five**] recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.
   1. Field Supervisor Qualifications: Full-time supervisors experienced in alteration work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on-site when alteration work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the Contractor.

B. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project alteration work program with specific requirements of programs required in other alteration work Sections.
   1. Dust Control: Include locations of proposed temporary dust-control partitions coordinated with continuing on-site operations and other known work in progress.
   2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-control devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include fire-watch personnel's training, duties, and authority to enforce fire safety.

D. Safety and Health Standard: Comply with ANSI/ASSP A10.6.

1.9 STORAGE AND HANDLING OF SALVAGED MATERIALS

A. Salvaged Materials:
   1. Clean loose dirt and debris from salvaged items unless more extensive cleaning is indicated.
   2. Store items in a secure area until delivery to Owner.
   3. Transport items to Owner's storage area on-site where designated by Owner.
   4. Protect items from damage during transport and storage.

B. Salvaged Materials for Reinstallation:
   1. Repair and clean items for reuse as indicated.
   2. Protect items from damage during transport and storage.
   3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make items functional for use indicated.

C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect/Engineer, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.

D. Storage Space:
   1. Owner will arrange for limited on-site location(s) for free storage of salvaged material.

1.10 FIELD CONDITIONS

A. Discrepancies: Notify Architect?Engineer through **Owner's Project Representative** of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

B. Owner's Removals: Before beginning alteration work, verify in correspondence with Owner that the items indicated on the Drawings have been removed.

C. Size Limitations in Existing Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within existing spaces, areas, rooms, and openings, including temporary protection

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding improvements from harm resulting from alteration work.
   1. Use only proven protection methods, appropriate to each area and surface being protected.
   2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
   3. Erect temporary barriers to form and maintain fire-egress routes.
   4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
   5. Contain dust and debris generated by alteration work and prevent it from reaching the public or adjacent surfaces.
   6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
   7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.

B. Temporary Protection of Materials to Remain:
   1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
   2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Utility and Communications Services:
1. Notify Owner, Architect/Engineer, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration work.
3. Maintain existing services unless otherwise indicated; keep in service, and protect against damage during operations. Provide temporary services during interruptions to existing utilities.

E. Existing Drains: Prior to the start of work in an area, **Plumbing Contractor** to test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.
1. Prevent solids such as adhesive or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from alteration work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

F. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.2 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following:
1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.
a. If combustible material cannot be removed, provide fire blankets to cover such materials.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or combustible materials, including welding, torch-cutting, soldering, brazing, removing paint with heat, or other operations where open flames or implements using high heat or combustible solvents and chemicals are anticipated:
1. Use of open-flame equipment is not permitted. Notify Owner **at least 72 hours** before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows:

C. Fire-Control Devices: Provide and maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.
   1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

3.3 GENERAL ALTERATION WORK

A. Have specialty work performed only by qualified specialists.

B. Ensure that supervisory personnel are present when work begins and during its progress.

C. Perform surveys of Project site as the Work progresses to detect hazards resulting from alterations.

D. Notify Architect/Engineer through **Owner's Project Representative** of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.
   1. Do not proceed with the work in question until directed by Architect.

END OF SECTION 013516

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, Owner’s Representative or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Requirements:
   1. Section 012100 "Allowances" for testing and inspecting allowances.
   2. Section 013200 "Construction Progress Documentation" for developing a schedule of required tests and inspections.
   3. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of [**5**] **five** previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
   1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Mockups: Full-size physical assemblies that are constructed either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
   1. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
   2. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" shall have the same meaning as the term "testing agency."

I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect/Engineer or **Owner’s Project Representative**.

1.4 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.5 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect/Engineer for clarification before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.
1. Refer uncertainties to Architect/Engineer for a decision before proceeding.

1.6 ACTION SUBMITTALS

A. Mockup Shop Drawings:
1. Include plans, sections, elevations, and details, indicating materials and size of mockup construction.
2. Indicate manufacturer and model number of individual components.
3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.7 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
2. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

F. Reports: Prepare and submit certified written reports and documents as specified.

G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.8 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within **[7] days** of the **Notice to Proceed**, and not less than **five** days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
   1. Project quality-control manager may also serve as Project superintendent.

C. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
   1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
   2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
   3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Special Inspector.

D. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements and approved mockups.

E. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.9 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.10 QUALITY ASSURANCE

A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged in the activities indicated.
   1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following Contractor's responsibilities, including the following:
   1. Provide test specimens representative of proposed products and construction.
   2. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
   3. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
   4. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect/Engineer, through **Owner's Project Representative**, with copy to Contractor. Interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
   1. Build mockups of size indicated.
   2. Build mockups in location indicated or, if not indicated, as directed by Architect/Engineer or **Owner's Project Representative**.
   3. Notify Architect Engineer and **Owner's Representative** [**7**] **seven** days in advance of dates and times when mockups will be constructed.
   4. Employ supervisory personnel who will oversee mockup construction. Employ workers who will be employed to perform same tasks during the construction at Project.
   5. Demonstrate the proposed range of aesthetic effects and workmanship.
   6. Obtain Architect/Engineer's approval of mockups before starting corresponding Work, fabrication, or construction.
      a. Allow [**7**] **seven** days for initial review and each re-review of each mockup.
   7. Promptly correct unsatisfactory conditions noted by Architect/Engineer's preliminary review, to the satisfaction of the Architect, before completion of final mockup.
   8. Approval of mockups by the Architect/Engineer does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   9. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
   10. Demolish and remove mockups when directed unless otherwise indicated.

1.11 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
   1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
   2. Payment for these services will be made from testing and inspection allowances specified in Section 012100 "Allowances," as authorized by Change Orders.
   3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
   1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
   2. Engage a qualified testing agency to perform quality-control services.
   3. Notify testing agencies at least [**24**] hours in advance of time when Work that requires testing or inspection will be performed.
   4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
   5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
   6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architect/Engineer**, Owner's Project Representative**, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify Architect/Engineer**, Owner's Project Representative** and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Delivery of samples to testing agencies.
   6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Document as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the Work progresses.
   1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.12 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified **testing agency** to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner**,** and as follows:

   1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures, and reviewing the completeness and adequacy of those procedures to perform the Work.
   2. Notifying Architect/Engineer, **Owner's Project Representative**, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
   3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect/Engineer, through **Owner's Project Representative.** with copy to Contractor and to authorities having jurisdiction.
   4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
   5. Interpreting tests and inspections, and stating in each report whether tested and inspected Work complies with or deviates from the Contract Documents.
   6. Retesting and reinspecting corrected Work.

1.13 ACCEPTABLE TESTING AGENCIES

A. Subject to compliance with requirements, testing agencies offering services that may be incorporated into the Work include, but are not limited to, the following:
   1. SJB Services, Inc. 5 Knabner Road, Mechanicville, New York 12118, tel. 518-899-7491
   2. Construction Technology Inspection & Testing, 4 William Street, Ballston Lake, New York 12019, tel. 518-399-1848
   3. PSI, 104 Erie Boulevard, Suite 1, Schenectady, NY 12305, tel. 518-377-9841.
   4. QCQA Labs, Inc.1594 State Street, Schenectady, NY 12304, tel. 518-370-5558.
   5. Others as recommended by the manufacturer of the product or equipment being tested.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
   1. Date test or inspection was conducted.
   2. Description of the Work tested or inspected.
   3. Date test or inspection results were transmitted to Architect.
   4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect/Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
   1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
   1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect/Engineer for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
   1. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
   2. ICC - International Code Council; www.iccsafe.org.
   3. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

C. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
   1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
   2. FED-STD - Federal Standard; (See FS).
   3. FS - Federal Specification; Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org.
   4. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

D. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
   1. NYS; State of New York; Division of Building Standards and Codes; www.dos.ny.gov/dcea

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:
1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
2. Section 011200 "Multiple Contract Summary" for responsibilities for temporary facilities and controls for projects utilizing multiple contracts.
3. Section 012100 "Allowances" for allowance for metered use of temporary utilities.
4. Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Owner’s Project Representative, Architect/Engineer, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use **without metering and without payment of use charges**.
1. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use **without metering and without payment of use charges**.
1. Provide connections and extensions of services as required for construction operations.

D. Gas Service: Gas from Owner's existing natural gas system is available for use **without metering and without payment of use charges**.
1. Provide connections and extensions of services as required for construction operations for temporary use of existing equipment.

1.4 INFORMATIONAL SUBMITTALS (ALL PRIME CONTRACTS)

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
1. Include location for concrete washout where required.

B. Implementation and Termination Schedule: Within [**7**] **seven** days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility based upon approved construction schedule.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
   1. Person responsible may also serve as Project superintendent.

E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
   1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
   2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
   3. Indicate methods to be used to avoid trapping water in finished work.

F. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
   1. Locations of dust-control partitions at each phase of work.
   2. HVAC system isolation schematic drawing.
   3. Location of proposed air-filtration system discharge.
   4. Waste-handling procedures.
   5. Other dust-control measures.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the *Building Code of New York State* and *ICC/ANSI A117.1*.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10 mils minimum thickness, with flame-spread rating of 15 or less in accordance with ASTM E84 and passing NFPA 701 Test Method 2.

B. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats, minimum 36 by 60 inches.

C. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Field Offices: Owner will provide conditioned interior space for field offices **for duration of Project**.
   1. Placement of additional Contractor Field Offices will be subject to approval of site utilization plan by the **Owner's Project Representative**.

B. Common-Use Field Office: **General Construction Contract** to provide of sufficient size to accommodate needs of **Owner's Project Representative**, Architect**,** and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
   1. Furniture required for Project-site documents, including file cabinets, plan tables, and plan racks.
   2. Conference area of sufficient size to accommodate meetings of [**12**] individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot-square tack and marker boards.
   3. Drinking water.
   4. Supplemental heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
   5. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

C. Storage and Fabrication Sheds and Enclosures: Provide sheds and enclosures sized, furnished, and equipped to accommodate materials and equipment for construction operations. Store combustible materials apart from building.
   1. Owner will provide conditioned interior space for storage of material **for duration of Project.**
   2. Placement subject to approval of site utilization plan by the **Owner's Project Representative**.
   3. No storage shall be permitted in common-use field office.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent, as required by locations and classes of fire exposures, to be provided by **General Construction Contract**.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
      a. Only indirect heater units may be used to temporary heat in enclosed spaces
   2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
   3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction following permanent enclosure and system startup, Contractor requesting use shall provide filter with MERV of **8** at each return-air grille in system and remove at end of construction.
      a. **Mechanical Contract** to clean HVAC system as required in Section 230130.51 "HVAC Air-Distribution System Cleaning."

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
   1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
   1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay.
   1. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Isolation of Work Areas: Prevent dust, fumes, and odors from entering existing HVAC system.
   1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
      a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
      b. Maintain negative air pressure within work area, using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
   2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
   3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Sanitary Facilities: **General Construction Contract** to provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
   1. New sanitary facilities shall **NOT** be used by Construction Personnel.

D. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. **Each Prime Contract** shall be responsible to select equipment that will not have a harmful effect on completed installations or elements being installed for their Work prior to permanent enclosure of the building.
2. Prior to substantial completion the **General Construction Contract** shall be responsible to provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
3. Use of permanent mechanical systems by **Mechanical (HVAC) Contract** for temporary heating purposes following permanent enclosure after all dust generating activities are complete shall be permitted only upon authorization of **Owner's Project Representative** and Architect/Engineer.

E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
1. **Electrical Contract** to provide minimum 110A (120V) temporary power service for use by **each Prime Contract** to within 50 feet of all work areas. Verify capacity and distribution requirements in field, as required.

F. Lighting: Temporary lighting with local switching that provides minimum illumination for construction operations, observations, inspections, and traffic conditions has been provided by Owner.
1. **Electrical Contract** to maintain existing temporary lighting and provide provisions for supplemental temporary lighting for use by **each Prime Contract** as may be required until substantial completion.
2. **Electrical Contract** to maintain existing exterior lighting that fulfills security and protection requirements without operating entire system.

G. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel.
1. **Electrical Contract** to provide temporary **WiFi cell phone access equipment** as required to support construction operations for use by **each Prime Contract**.
2. **Each Prime Contract** to provide superintendent with cellular telephone.

H. Electronic Communication Service: **Electrical Contract** to provide secure WiFi wireless connection to internet with provisions for access by Architect and Owner's Representative.

3.4 SUPPORT FACILITIES INSTALLATION

A. General: **All Prime Contracts** shall comply with the following:
1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Utilize designated area within existing building for temporary field offices.
3. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Field Office: **General Construction Contractor** shall maintain common use field office.
1. Keep office clean and orderly.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
   a. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

E. Storage and Staging: Use designated areas of Project site for storage and staging needs.

F. Project Signs: Unauthorized signs are not permitted.
1. **General Construction Contractor** to provide project identification signage.
2. **General Construction Contractor** to provide other temporary signs as indicated and as required to inform public and individuals seeking entrance to Project.
   a. Provide temporary, directional signs for construction personnel and visitors.
   b. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
1. **General Construction Contractor** to provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Section 017300 "Execution" for progress cleaning requirements.
2. **All Prime Contractors** are responsible for daily cleanup and disposal of waste materials.
   a. All debris and waste are to be consolidated prior to placement into dumpsters provided by the **General Construction Contractor**.

H. Lifts and Hoists: **Each Prime Contract** to provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: **General Construction Contract**or to protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: **Each Prime Contract** to provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Section 011000 "Summary."

C. Pest Control: **General Construction Contractor** to engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion.
1. Perform control operations lawfully, using environmentally safe materials.

D. Security Enclosure and Lockup: **General Construction Contract** to provide temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
1. Lock entrances at end of each work day.

E. Barricades, Warning Signs, and Lights: **General Construction Contract** shall be responsible to comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

F. Temporary Egress: **General Construction Contract** shall maintain temporary egress from existing facilities as indicated and as required by authorities having jurisdiction.

G. Temporary Enclosures: **General Construction Contract** to provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
   1. Where heating or cooling is needed and permanent enclosure is not complete, **each Prime Contract** shall be responsible to insulate temporary enclosures as required for their Work.

H. Temporary Fire Protection: **Each Prime Contract** shall provide temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
   1. **Fire Suppression Contract** shall maintain existing fire-protection facilities. Operation of sprinkler control valves shall be allowed only by properly authorized personnel and shall be accompanied by notification of duly designated parties. Where the sprinkler protection is being regularly turned off and on to facilitate connection of newly completed segments, the sprinkler control valves shall be checked at the end of each work period to ascertain that protection is in service.
   2. Prohibit smoking on Owner's property.
   3. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
   4. **General Construction Contract** shall develop and supervise an overall fire-prevention and -protection program at Project site.
      a. Review needs with local fire department and establish procedures to be followed.
      b. Instruct personnel in methods and procedures.
      c. Post warnings and information.

3.6 MOISTURE AND MOLD CONTROL

A. Moisture and Mold Protection: **Each Prime Contract** shall protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
   1. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, **each Prime Contract** shall protect their Work as follows:
   1. Protect porous materials from water damage.
   2. Protect stored and installed material from flowing or standing water.
   3. Keep porous and organic materials from coming into prolonged contact with concrete.
   4. Remove standing water from decks.
   5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, **each Prime Contract** shall protect their Work as follows:
   1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
   2. Keep interior spaces reasonably clean and protected from water damage.
   3. Periodically collect and remove waste containing cellulose or other organic matter.
   4. Discard or replace water-damaged material.
   5. Do not install material that is wet.
   6. Discard, replace or clean stored or installed material that begins to grow mold.
   7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, **General Construction Contractor** shall maintain as follows:
   1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
   2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
      a. **Mechanical Contract** to clean HVAC system as required in Section 230130.51 “HVAC Air-Distribution System Cleaning."
   3. **Each Prime Contract** shall comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
      a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for [**48**] hours are considered defective and require replacing.
      b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for [**48**] hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
      c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within **48** hours.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: **Each Prime Contract** shall enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor.
   2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:
1. Section 011000 "Summary" for Contractor requirements related to Owner-furnished products.
2. Section 012100 "Allowances" for products selected under an allowance.
3. Section 012300 "Alternates" for products selected under an alternate.
4. Section 012500 "Substitution Procedures" for requests for substitutions.
5. Section 014200 "References" for applicable industry standards for products specified.
6. Section 01770 "Closeout Procedures" for submitting warranties.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
   1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
   2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."

F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
   1. Resolution of Compatibility Disputes between Multiple Contractors:
      a. Contractors are responsible for providing products and construction methods compatible with products and construction methods of other contractors.
      b. If a dispute arises between the multiple contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
   1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
   2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
      a. Name of product and manufacturer.
      b. Model and serial number.
      c. Capacity.
      d. Speed.
      e. Ratings.
   3. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.5 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment furnished by Owner. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
   4. Where products are accompanied by the term "as selected," Architect will make selection.
   5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
   6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
      a. Submit additional documentation required by Architect through **Owner's Representative** in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:
   1. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
      a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
   2. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
      a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
      b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
   3. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
      a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
   4. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
      a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
      b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
    a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
1. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Single-Step Process: When acceptable to Architect, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by the Architect of Contractor's request for use of comparable product and of individual submittal requirements will also satisfy other submittal requirements.

PART 3 - EXECUTION (NOT USED)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Installation of the Work.
   3. Cutting and patching.
   4. Coordination of Owner's portion of the Work.
   5. Coordination of Owner-installed products.
   6. Progress cleaning.
   7. Starting and adjusting.
   8. Protection of installed construction.
   9. Correction of the Work.

B. Related Requirements:
   1. Section 011000 "Summary" for coordination of Owner-furnished products, Owner-performed work, Owner's separate contracts, and limits on use of Project site.
   2. Section 013300 "Submittal Procedures" for submitting surveys.
   3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
   4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
   5. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 PREINSTALLATION MEETINGS

A. Cutting and Patching Conference: Conduct conference at Project site.
   1. Prior to commencing work requiring cutting and patching, review extent of cutting and patching anticipated and examine procedures for ensuring satisfactory result from cutting and patching work. Inform Architect/Engineer and **Owner’s Project Representative** of scheduled meeting. Require representatives of each entity directly concerned with cutting and patching to attend, including the following:
      a. Contractor's superintendent.
      b. Trade supervisor responsible for cutting operations.
      c. Trade supervisor(s) responsible for patching of each type of substrate.
      d. Mechanical, electrical, and utilities contractors' supervisors, to the extent each trade is affected by cutting and patching operations.

2. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

B. Layout Conference: Conduct conference at Project site.
1. Prior to establishing layout of partitions, review building location requirements. Review benchmark, control point, and layout and dimension requirements. Inform **Owner's Project Representative** of scheduled meeting. Require representatives of each entity directly concerned with Project layout to attend, including the following:
a. Contractor's superintendent.
2. Review meanings and intent of dimensions, notes, terms, graphic symbols, and other layout information indicated on the Drawings.
3. Review requirements for including layouts on Shop Drawings and other submittals.
4. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least [**10**] days prior to the time cutting and patching will be performed. Include the following information:
1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 CLOSEOUT SUBMITTALS

A. As-built Construction Layout Drawing: Submit two [**2**] copies showing all the Work performed and record layout data.

1.6 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
a. Primary operational systems and equipment.

b. Fire separation assemblies.
c. Air or smoke barriers.
d. Fire-suppression systems.
e. Plumbing piping systems.
f. Mechanical systems piping and ducts.
g. Control systems.
h. Communication systems.
i. Fire-detection and -alarm systems.
j. Electrical wiring systems.
k. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
   a. Water, moisture, or vapor barriers.
   b. Membranes and flashings.
   c. Exterior curtain-wall construction.
   d. Sprayed fire-resistive material.
   e. Equipment supports.
   f. Piping, ductwork, vessels, and equipment.
   g. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching.
   a. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities.
   b. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. Where possible retain the original installer or fabricator to cut and patch the following categories of exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.
2. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
   1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
   2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
   1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
   2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
   3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
   2. List of detrimental conditions, including substrates.
   3. List of unacceptable installation tolerances.
   4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to **Owner's Project Representative** that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction.
   1. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product.
   1. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect through **Owner's Representative** in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect/Engineer and **Owner's Project Representative** promptly.

B. Lay out the Work, using the following accepted practices:
1. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
2. Inform installers of lines and levels to which they must comply.
3. Check the location, level and plumb, of every major element as the Work progresses.
4. Notify Architect/Engineer and **Owner's Project Representative** when deviations from required lines and levels exceed allowable tolerances.

C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect and **Owner's Project Representative**.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of **108 inches** in occupied spaces and **96 inches** in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.
   3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.
   1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.5 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of Work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 COORDINATION OF OWNER'S PORTION OF THE WORK

A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.
1. Provide temporary facilities required for Owner-furnished, Contractor-installed and Owner-furnished, Owner-installed products.
2. Refer to Section 011000 "Summary" for other requirements for Owner-furnished, Contractor-installed and Owner-furnished, Owner-installed products

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and Owner's separate contractors.
1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction personnel and Owner's separate contractors at preinstallation conferences covering portions of the Work that are to receive

Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
      a. Use containers intended for holding waste materials of type to be stored.
   4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls." And Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Section 017900 “Demonstration and Training.”

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

D. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

NONCONFORMING WORK NOTICE

Project: MONTGOMERY COUNTY Health & Human Services
1 Venner Road, Amsterdam, New York 12010

To: _____

_____

Re: _____

Report Number: _____

From: _____

Date Observed: _____ Date Reported: _____

A/E Project Number: 20.0651

Contract For: _____

Specification Section: Paragraph: Drawing Reference: Detail:

Nature of Nonconformance:

Signed by: Date: Date Response Needed:

Proposed Correction (Response):

Amount of Time for Correction:

☐ Attachments

Response From: To: Date Rec'd: Date Ret'd:

Signed by: Date:

Copies: ☒ Owner ☒ A/E ☒ Consultants ☐ _____ ☐ _____ ☐ _____ ☒File

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Form Version: October 2017
CSI Form 9.8A

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:
   1. Salvaging nonhazardous demolition and construction waste.
   2. Recycling nonhazardous demolition and construction waste.
   3. Disposing of nonhazardous demolition and construction waste.

B. Related Requirements:
   1. Section 011200 "Multiple Contract Summary" for coordination of responsibilities for waste management.
   2. Section 042000 "Unit Masonry" for disposal requirements for masonry waste.

1.3 DEFINITIONS

A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.

C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner’s property.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 ACTION SUBMITTALS

A. Waste Management Plan: Submit plan within [**7**] **seven** days of date established for commencement of the Work.

1.6 INFORMATIONAL SUBMITTALS

A. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

B. Refrigerant Recovery: Comply with requirements in Section 024119 "Selective Demolition" for refrigerant recovery submittals.

1.7 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Refrigerant Recovery Technician Qualifications: Comply with requirements in Section 024119 "Selective Demolition."

C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
   1. Review and discuss waste management plan including responsibilities of each contractor.
   2. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
   3. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
   4. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

A. General: Plan shall consist of waste identification and waste reduction work plan. Distinguish between demolition and construction waste.

B. Waste Identification: Indicate anticipated types of demolition, site-clearing, and, construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of off-site.
   1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work in compliance with Section 024119 "Selective Demolition."
   2. Recycled Materials: Include type of recycled materials that will be accepted.
   3. Disposed Materials: Indicate how and where materials will be disposed of.
   4. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste to on-site recycling center. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
    a. Asphalt paving.
    b. Concrete.
    c. Concrete reinforcing steel.
    d. Brick.
    e. Concrete masonry units.
    f. Wood studs.
    g. Wood joists.
    h. Plywood and oriented strand board.
    i. Wood paneling.
    j. Wood trim.
    k. Structural and miscellaneous steel.
    l. Rough hardware.
    m. Roofing.
    n. Insulation.
    o. Doors and frames.
    p. Door hardware.
    q. Windows.
    r. Glazing.
    s. Metal studs.
    t. Gypsum board.
    u. Acoustical tile and panels.
    v. Carpet.
    w. Carpet pad.
    x. Demountable partitions.
    y. Equipment.
    z. Cabinets.
    aa. Plumbing fixtures.
    bb. Piping.
    cc. Supports and hangers.
    dd. Valves.
    ee. Sprinklers.
    ff. Mechanical equipment.
    gg. Refrigerants.
    hh. Electrical conduit.
    ii. Copper wiring.
    jj. Lighting fixtures.
    kk. Lamps.
    ll. Ballasts.
    mm. Electrical devices.
    nn. Switchgear and panelboards.
    oo. Transformers.

2. Construction Waste:
    a. Masonry and CMU.
    b. Lumber.
    c. Wood sheet materials.
    d. Wood trim.

e. Metals.
f. Roofing.
g. Insulation.
h. Carpet and pad.
i. Gypsum board.
j. Piping.
k. Electrical conduit.
l. Packaging:
1) Paper.
2) Cardboard.
3) Boxes.
4) Plastic sheet and film.
5) Polystyrene packaging.
6) Wood crates.
7) Plastic pails.

3. Construction Office Waste:
a. Paper.
b. Aluminum cans.
c. Glass containers.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Waste Management Coordinator: **Owner's Representative** to provide coordination, monitoring, and reporting on status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Comply with requirements in Section 024119 "Selective Demolition" for salvaging demolition waste.

B. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
1. Clean salvaged items.
2. Store items in a secure area until installation.

3. Protect items from damage during transport and storage.
4. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

C. Salvaged Items for Sale: **Not permitted** on Project site.

D. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
1. Clean salvaged items.
2. Store items in a secure area until delivery to Owner.
3. Transport items to Owner's storage area on-site designated by Owner.
4. Protect items from damage during transport and storage.

E. Doors and Hardware: Brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.

F. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

G. Plumbing Fixtures: Separate by type and size.

H. Lighting Fixtures: Separate lamps by type and protect from breakage.

I. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.4 DISPOSAL OF WASTE

A. General: Except for items or materials to be recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final completion procedures.
   3. Warranties.
   4. Final cleaning.

B. Related Requirements:
   1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
   2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
   3. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   4. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest-control inspection.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of [**7**] **seven** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
   1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
   3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by **Architect/Engineer**. Label with manufacturer's name and model number.
   5. Submit testing, adjusting, and balancing records.
   6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of [**7**] **seven** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
   1. Advise Owner of pending insurance changeover requirements.
   2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   3. Complete startup and testing of systems and equipment.
   4. Perform preventive maintenance on equipment used prior to Substantial Completion.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
   6. Advise Owner of changeover in utility services.
   7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
   8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   9. Complete final cleaning requirements.
   10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of [**7**] **seven** days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, **Architect/Engineer** will either proceed with inspection or notify Contractor of unfulfilled requirements. **Architect/Engineer** will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by **Architect/Engineer**, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. When Architect is required to perform second and additional inspections due to failure of Work to comply with certifications of Prime Contractor, Owner will compensate **Architect/Engineer** for additional services and deduct amount paid from Final Payment to Prime Contractor.
3. Results of completed inspection will form the basis of requirements for final completion.

1.8 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of **Architect/Engineer's** Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of [**7**] **seven** days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, **Architect/Engineer** will either proceed with inspection or notify Contractor of unfulfilled requirements.
1. **Architect/Engineer** will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

C. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
1. When **Architect/Engineer** is required to perform second and additional inspections due to failure of Work to comply with certifications of Prime Contractor, Owner will compensate **Architect/Engineer** for additional services and deduct amount paid from Final Payment to Prime Contractor.

1.9 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, according to Drawings.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:
    a. Project name.
    b. Date.
    c. Name of Architect/Engineer.
    d. Name of Contractor.
    e. Page number.
4. Submit list of incomplete items in one of the following formats:
    a. MS Excel Electronic File: **Architect/Engineer**, through **Owner's Project Representative,** will return annotated file.

B. Use CSI Form 14.1A.

1.10 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within [**15**] **fifteen** days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
   1. Submit on digital media acceptable to Architect and by uploading to web-based project software site.

E. Warranties in Paper Form:
   1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
   2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
   3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned.
   1. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. All Contractors shall leave Project clean and ready for occupancy.

C. General Construction Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Remove tools, construction equipment, machinery, and surplus material from Project site.
4. Remove snow and ice to provide safe access to building.
5. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition.
6. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, equipment rooms, attics, and similar spaces.
7. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
8. Vacuum and mop concrete.
9. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
10. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
11. Remove labels that are not permanent.
12. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
13. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
14. Clean exposed surfaces of diffusers, registers, and grills.
15. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
16. Clean strainers.
17. Leave Project clean and ready for occupancy.

D. Plumbing Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
1. Leave plumbing fixtures in a sanitary condition, free of stains, including stains resulting from water exposure.
2. Remove labels that are not permanent.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Leave Project clean and ready for occupancy.

E. Mechanical (HVAC) Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
1. Wipe surfaces of mechanical equipment. Remove excess lubrication, paint and other foreign substances.
2. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
3. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection].
    a. Clean HVAC system in compliance with Section 230130.51 "HVAC Air-Distribution System Cleaning." Provide written report on completion of cleaning.
4. Remove labels that are not permanent.
5. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
6. Leave Project clean and ready for occupancy.

F. Electrical Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

1. Leave light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
2. Wipe surfaces of fire alarm equipment. Remove excess lubrication, paint and other foreign substances.
3. Remove labels that are not permanent.
4. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
5. Leave Project clean and ready for occupancy.

3.2 PEST CONTROL:

A. General Construction Contractor shall engage an experienced, licensed exterminator to make a final inspection and rid building of rodents, insects, and other pests.
   1. Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

3.3 CONSTRUCTION WASTE DISPOSAL:

A. Construction Waste Disposal: Comply with waste-disposal requirements in Section 015000 "Temporary Facilities and Controls." and Section 017419 "Construction Waste Management and Disposal."

3.4 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
   1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
   2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
      a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
   3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
   4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

PUNCH LIST

Project: MONTGOMERY COUNTY Health & Human Services

1 Venner Road, Amsterdam, New York 12010

To (Contractor): _____

_____

From (A/E): C.T. Male Associates

Site Visit Date: _____

A/E Project Number: 20.0651

Contract For: _____

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Item Number	Room Number	Location (Area)	Description	Correction/Completion Date	Verification A/E Check

☐ Attachments

Signed by: Date:

Copies: ☒ Owner ☒ Consultants ☒ Special Inspect ☒ Code Official ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☒ File

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Form Version: October 2017
CSI Form 14.1A

DRAFT

AIA® Document G704™ – 2017

Certificate of Substantial Completion

PROJECT: *(name and address)* Montgomery County Health & Human Services 1 Venner Road Amsterdan, New York 12010	**CONTRACT INFORMATION:** Contract For: Date:	**CERTIFICATE INFORMATION:** Certificate Number: Date:
OWNER: *(name and address)* Montgomery County County Annex Building P.O. Box 1500 – 20 Park Street Fonda, New York 12068-1500	**ARCHITECT:** *(name and address)* C.T. Male Associates Design Professsional Corporation 50 Century Hill Drive Latham, NY 12110	**CONTRACTOR:** *(name and address)*

The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.
(Identify the Work, or portion thereof, that is substantially complete.)

C.T. Male Associates Engineering, Surveying, Architecture, Landscape Architecture & Geology, D.P.C.		R. Campagnola, R.A. Principal Architect	
ARCHITECT *(Firm Name)*	**SIGNATURE**	**PRINTED NAME AND TITLE**	**DATE OF SUBSTANTIAL COMPLETION**

WARRANTIES
The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:
(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

WORK TO BE COMPLETED OR CORRECTED
A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:
(Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within thirty (30) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: $

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:
(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)
In accordance with requirements of the Contract Documents, unless noted otherwise.

An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 of the General Conditions of the Contract for Construction and thereafter upon renewal or replacement of such coverage until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

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User Notes: (3B9ADA1C)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

CONTRACTOR *(Firm Name)*	**SIGNATURE**	**PRINTED NAME AND TITLE**	**DATE**
Montgomery County **OWNER** *(Firm Name)*	**SIGNATURE**	**PRINTED NAME AND TITLE**	**DATE**

DRAFT

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User Notes: (3B9ADA1C)

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
   1. Operation and maintenance documentation directory manuals.
   2. Emergency manuals.
   3. Systems and equipment operation manuals.
   4. Systems and equipment maintenance manuals.
   5. Product maintenance manuals.

B. Related Requirements:
   1. Division 01 Section "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
   2. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
   3. Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
   1. **Architect/Engineer** will comment on whether content of operation and maintenance submittals is acceptable.
   2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:
   1. Submit on digital media acceptable to Architect by uploading to web-based project software site. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least **[30]** days before commencing demonstration and training. **Architect/Engineer** will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least **[15]** days before commencing demonstration and training. **Architect/Engineer** will return copy with comments.
   1. Correct or revise each manual to comply with Architect/Engineer's comments. Submit copies of each corrected manual within [**15**] days of receipt of Architect/Engineer's comments and prior to commencing demonstration and training.

E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.5 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
   1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
   2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
   1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
      a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
      b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
   2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
   3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
   4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
   5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
      a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
      b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.6 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Architect.
   7. Name and contact information for Commissioning Authority.
   8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   9. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
   1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.7 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:
   1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
   2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
   3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

1.8 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.9 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.

3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.10 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of maintenance manuals.

1.11 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   4. Material and chemical composition.
   5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:
   1. Inspection procedures.
   2. Types of cleaning agents to be used and methods of cleaning.
   3. List of cleaning agents and methods of cleaning detrimental to product.
   4. Schedule for routine cleaning and maintenance.
   5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:
   1. Record Drawings.
   2. Record Specifications.
   3. Record Product Data.
   4. Miscellaneous record submittals.

B. Related Requirements:
   1. Division 01 Section "Multiple Contract Summary" for coordinating project record documents covering the Work of multiple contracts.
   2. Division 01 Section "Execution" for construction layout and field engineering.
   3. Division 01 Section "Closeout Procedures" for general closeout procedures.
   4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
   5. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit copies of record Drawings as follows:
      a. Initial Submittal:
         1) Submit PDF electronic files of scanned record prints and [**one**] set of file prints.
         2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
      b. Final Submittal:
         1) Submit PDF electronic files of scanned Record Prints and [**two**] set(s) of file prints.
         2) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit **two paper copies** or **annotated PDF electronic files** of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit **two paper copies** or **annotated PDF electronic files** of each submittal.
   1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit **two paper copies** or **annotated PDF electronic files** of each submittal.

E. Reports: Submit monthly written report, in conjunction with application for payment, indicating items incorporated in Project record documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporate

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
   1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Accurately record information in an acceptable drawing technique.
      c. Record data as soon as possible after obtaining it.
      d. Record and check the markup before enclosing concealed installations.
      e. Cross-reference record prints to corresponding photographic documentation.
   2. Content: Types of items requiring marking include, but are not limited to, the following:
      a. Dimensional changes to Drawings.
      b. Revisions to details shown on Drawings.
      c. Depths of foundations.
      d. Locations and depths of underground utilities.
      e. Revisions to routing of piping and conduits.
      f. Revisions to electrical circuitry.
      g. Actual equipment locations.
      h. Duct size and routing.
      i. Locations of concealed internal utilities.
      j. Changes made by Change Order or Construction Change Directive.
      k. Changes made following Architect's written orders.
      l. Details not on the original Contract Drawings.
      m. Field records for variable and concealed conditions.
      n. Record information on the Work that is shown only schematically.
   3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
   4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
   5. Mark important additional information that was either shown schematically or omitted from original Drawings.
   6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect and **Owner's Project Representative**. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

C. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect **and Owner's Project Representative**. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
   1. Format: Annotated PDF electronic file with comment function enabled.
   2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
   3. Refer instances of uncertainty to Architect/Engineer through **Owner's Project Representative** for resolution.

4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
    a. See Section 013100 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
    b. Architect/Engineer will provide data file layer information. Record markups in separate layers.

D. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
3. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file or scanned PDF electronic file(s) of marked-up paper copy of Product Data.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.8 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes.
1. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss.
2. Provide access to Project Record Documents for Architect/Engineer's and **Owner Project Representative's** reference during normal working hours.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Demonstration of operation of systems, subsystems, and equipment.
   2. Training in operation and maintenance of systems, subsystems, and equipment.

B. Related Requirements:
   1. Divisions 02 through 49 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
   1. Indicate proposed training modules utilizing manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of live instructional module.

B. Qualification Data: For instructor, if requested by **Architect/Engineer**.

1.4 CLOSEOUT SUBMITTALS

1. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.5 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.6 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by **Architect/Engineer**.

1.7 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.
2. Documentation: Review the following items in detail:
    a. Emergency manuals.
    b. Operations manuals.
    c. Maintenance manuals.
    d. Project record documents.
    e. Identification systems.
    f. Warranties and bonds.
    g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.
    e. Control sequences.
    f. Safety procedures.
    g. Instructions on stopping.
    h. Normal shutdown instructions.
    i. Operating procedures for emergencies.
    j. Operating procedures for system, subsystem, or equipment failure.
    k. Seasonal and weekend operating instructions.
    l. Required sequences for electric or electronic systems.
    m. Special operating instructions and procedures.
5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
7. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning
   e. Procedures for preventive maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
8. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

1.8 PREPARATION

A. Assemble training modules into a training manual organized in coordination with requirements in Division 01 Section "Operations and Maintenance Data."

1.9 INSTRUCTION

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
   1. Owner will furnish instructor a description of Owner's operational philosophy.
   2. Owner will furnish Contractor with names and positions of participants.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner with at least **[7] seven** days advance notice.

C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

D. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION 017900

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DIVISION 2

Existing Conditions

SECTION 024119 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Demolition and removal of selected portions of building or structure.
   2. Demolition and removal of selected site elements.
   3. Salvage of existing items to be reused or recycled.

B. Related Requirements:
   1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
   2. Section 017300 "Execution" for cutting and patching procedures.
   3. Section 013516 "Alteration Project Procedures" for general protection and work procedures for alteration projects.
   4. Section 260505 "Selective Demolition for Electrical" for electrical demolition.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
   1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Use of roof scuttle.
   5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

C. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
   1. Before selective demolition, Owner will remove the following items:
      a. Furnishings, fixtures and equipment.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-alarm facilities in service during selective demolition operations.

1.9 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Existing warranties include the following:
   1. SBS modified bituminous membrane roofing.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.10 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
   1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
   2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
6. Provide temporary cap on storm sewer utilities to remain. Discard sections that were cut and removed.

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least two (2) hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:
1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

E. Roofing: Existing roofing to remain.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
   4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations.
   1. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Remove: selective portions of existing structure as shown on Drawings.

B. Remove: selective portions of existing mechanical, electrical, and plumbing systems by appropriate prime contractor, as shown on Drawings.

C. Remove and Salvage: existing carpet tiles that occur in, or are adjacent to construction being demolished, as shown on Drawings.

D. Remove and Reinstall: Obstructions within limits of Work, including existing window treatments as required for painting.

E. Existing to Remain: Any items that occur in, or are adjacent to, construction being demolished, but are not being removed and reinstalled as shown on Drawings, including, but not limited to, existing metal door frames, wall coverings, carpet tile, and non-functional HVAC metal wall enclosure fan coil cabinets below windows.

F. Dismantle: items attached to existing substrates that require special care in removal where indicated to be salvaged or reused; otherwise items are to be disposed.

END OF SECTION 024119

MONTGOMERY COUNTY NY

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DIVISION 3

Concrete

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:
1. Section 024119 “Selective Demolition” for removal of selected portions of existing concrete slabs-on-grade for new underslab plumbing piping. .
2. Section 035413 “Gypsum Cement Underlayment” for self-leveling, gypsum cement underlayment for application below interior floor coverings.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
   a. Contractor's superintendent.
   b. Concrete subcontractor.
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
1. Location of construction joints is subject to approval of the Architect.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, manufacturer, and testing agency.

B. Welding certificates.

C. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Semirigid joint filler.
10. Joint-filler strips.
11. Repair materials.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

E. Field quality-control reports.

F. Minutes of preinstallation conference.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."

F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301.
2. ACI 117.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
a. High-density overlay, Class 1 or better.
b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
c. Structural 1, B-B or better; mill oiled and edge sealed.
d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.

E. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

F. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.

G. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

H. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

I. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 1064/A1064M, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowels: Plate dowel basket assemblies for control joints, and plate dowels for construction joints, as manufactured by PNA Construction Technologies or approved equal.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
1. Portland Cement: ASTM C 150, Type I/II, gray. Supplement with the following:
a. Fly Ash: ASTM C 618, Class F or C.
b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Silica Fume: ASTM C 1240, amorphous silica.

C. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
1. Maximum Coarse-Aggregate Size: 1-1/2 inches (38 mm) nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.7 LIQUID FLOOR TREATMENTS

A. Water Repellant Floor Treatment: Clear, VOC compliant, odorless, penetrating, water repellant 100 percent reactive waterborne silane-siloxane blend.
1. Surpass NCHRP 244 Series II by reducing water penetration by 85 percent and salt penetration by 90 percent.
2. Warranty: 10 years.

B. Available Products:
a. Aquapel + Plus, by L&M Construction Chemicals.

C. Apply to floor slabs not specified to receive resinous flooring systems.

2.8 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. BASF Construction Chemicals - Building Systems; Confilm.
b. Conspec by Dayton Superior; Aquafilm.
c. Dayton Superior Corporation; Sure Film (J-74).
d. Edoco by Dayton Superior; BurkeFilm.
e. Euclid Chemical Company (The), an RPM company; Eucobar.
f. L&M Construction Chemicals, Inc.; E-CON.
g. Meadows, W. R., Inc.; EVAPRE.
h. Sika Corporation; SikaFilm.
i. Symons by Dayton Superior; Finishing Aid.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

2.9 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

B. Semi-rigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.

C. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

2.11 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
   1. Fly Ash: 25 percent.
   2. Ground Granulated Blast-Furnace Slag: 50 percent.
   3. Combined Fly Ash and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash not exceeding 25 percent.
   4. Silica Fume: 10 percent.
   5. Combined Fly Ash and Silica Fume: 35 percent with fly ash not exceeding 25 percent and silica fume not exceeding 10 percent.
   6. Combined Fly Ash, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash not exceeding 25 percent and silica fume not exceeding 10 percent.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.
   1. Use water-reducing, high-range water-reducing, or plasticizing admixture in concrete, as required, for placement and workability.
   2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
   3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings and Foundation Walls: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.50.
   3. Slump Limit: 4 inches (100 mm), or 8 inches (200 mm) for concrete with verified slump of 2 to 4 inches (50 to 100 mm) before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch (25 mm). Coordinate slump requirements with insulating concrete form manufacturer where applicable.
   4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery.
   5. Maximum aggregate size: As recommended by insulating concrete form manufacturer where applicable. Coordinate with insulating concrete form manufacturer.

B. Interior Slabs-on-Grade and Interior Slab-on-Deck: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4000 psi (31 MPa) at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.45.
   3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
   4. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

C. Exterior Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4500 psi (31 MPa) at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.45.
   3. Slump Limit: 4 inches (100 mm), plus or minus 1 inch (25 mm).
   4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery.

2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
   1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Not permitted.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

A. Install insulated concrete forms according to manufacturer’s specifications.
   1. Alternate methods of forming, subject to review and approval by Architect, shall be constructed as indicated below.

B. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

C. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

D. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
   1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
   2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.

E. Construct forms tight enough to prevent loss of concrete mortar.

F. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
   1. Install keyways, reglets, recesses, and the like, for easy removal.
   2. Do not use rust-stained steel form-facing material.

G. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

H. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

I. Chamfer exterior corners and edges of permanently exposed concrete unless noted otherwise.

J. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

K. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

L. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

M. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
   1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
   1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
   2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
   1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.5 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls as required. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Grooved Contraction Joints in Exterior Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius as indicated. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

D. Sawcut Contraction Joints in Interior Slabs-on-Grade: Construct contraction joints in interior slabs to form panels of patterns as shown. Use saw cuts 1/8 inch wide by 1” deep, unless otherwise indicated.
1. Contraction joints in floor slabs are to be formed by saw cutting as soon as possible after the slab finishing as may be safely done without dislodging aggregate by a dry cut saw, such as that by Soff-Cut International, Corona, CA.
2. In areas that are not scheduled to receive a resinous flooring system, contraction joint filler material shall be placed per the manufacturer’s printed instructions after a minimum of 90 days after concrete has been placed, unless directed by the owner.

E. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

F. Doweled Joints: Install dowels at joints where indicated, according to manufacturer’s specifications.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
   1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
   1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
   2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
   3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   2. Maintain reinforcement in position on chairs during concrete placement.
   3. Screed slab surfaces with a straightedge and strike off to correct elevations.
   4. Slope surfaces uniformly to drains where required.
   5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
   2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:
   1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
   2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
   1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
   1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
   2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
   3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.
   1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings or to receive mortar setting beds for bonded cementitious floor finishes.
   2. Scratch finish shall not be provided in areas that are specified to receive resinous flooring systems. Resinous flooring applicator shall prepare concrete surface as required by flooring manufacturer.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
   1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
   1. Apply a trowel finish to surfaces indicated, exposed to view, or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
   1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
   1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction.
   1. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.10 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
   1. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations.
   1. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
   1. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive.
   a. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.11 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
   1. Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
   1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
   2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
   3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:
1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Verification of use of required design mixture.
4. Concrete placement, including conveying and depositing.
5. Curing procedures and maintenance of curing temperature.
6. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.

a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.
   a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
   a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
8. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

3.15 PROTECTION OF LIQUID FLOOR TREATMENTS

A. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

END OF SECTION 033000

SECTION 035413 – GYPSUM CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Self-leveling, gypsum cement underlayment for application below interior floor coverings.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:
   1. Gypsum cement underlayment.
   2. Primer.
   3. Surface sealer.

B. Shop Drawings: Include plans indicating substrates, locations, and average depths of underlayment based on survey of substrate conditions.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.
   1. Place gypsum cement underlayments only when ambient temperature and temperature of substrates are between 50 and 80 deg F (10 and 27 deg C).

PART 2 - PRODUCTS

2.1 GYPSUM CEMENT UNDERLAYMENTS

A. Gypsum Cement Underlayment: Self-leveling, gypsum cement product that can be applied in minimum uniform thickness of 1/8 inch to match adjacent floor elevations.
   1. Compressive Strength: Not less than 3000 at 28 days when tested according to ASTM C472.
   2. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer, formulated for use with underlayment when applied to substrate and conditions indicated.

B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch; or coarse sand as recommended by underlayment manufacturer.
   1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

C. Water: Potable and at a temperature of not more than 70 deg F (21 deg C).

D. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

E. Surface Sealer: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of the Work.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare and clean substrate according to manufacturer's written instructions.
   1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
   2. Fill substrate voids to prevent underlayment from leaking.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.
   1. Moisture Testing: Perform tests so that each test area does not exceed \200 sq. ft., and perform no fewer than two tests in each installation area and with test areas evenly spaced in installation areas.
      a. Anhydrous Calcium Chloride Test, ASTM F1869: Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
      b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 85 percent relative humidity level measurement, or as recommended by gypsum cement underlayment manufacturer.

C. Nonporous Substrates: Remove waxes, sealants, and other contaminants that might impair underlayment bond; prepare surfaces according to manufacturer's written instructions.

D. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 INSTALLATION

A. Mix and install underlayment components according to manufacturer's written instructions.
   1. Close areas to traffic during underlayment installation and for time period after installation recommended in writing by manufacturer.
   2. Coordinate installation of components to provide optimum adhesion to substrate and between coats.
   3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Install underlayment to produce uniform, level surface.
   1. Install a final layer without aggregate to product surface.
   2. Feather edges to match adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during installation and curing processes.

E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

F. Apply surface sealer at rate recommended by manufacturer.

G. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 INSTALLATION TOLERANCES

A. Finish and measure surface, so gap at any point between gypsum cement underlayment surface and an unleveled, freestanding, 10-foot-long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch and 1/16 inch in 2 feet.

3.5 PROTECTION

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 035413

MONTGOMERY COUNTY NY

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DIVISION 4

Masonry

SECTION 040110 – MASONRY CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes cleaning the following:
   1. Unit masonry surfaces.
   2. Precast concrete panel surfaces.

1.3 DEFINITIONS

A. Very Low-Pressure Spray: Under 100 psi.

B. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm .

C. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.

D. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to cleaning masonry including, but not limited to, the following:
      a. Verify masonry-cleaning equipment and facilities needed to make progress and avoid delays.
      b. Materials, material application, and sequencing.
      c. Cleaning program.
      d. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

A. Work Sequence: Perform masonry-cleaning work in the following sequence:
   1. Remove plant growth.
   2. Inspect for open mortar joints. Where repairs are required, delay further cleaning work until after repairs are completed, cured, and dried to prevent the intrusion of water and other cleaning materials into the wall.
   3. Clean masonry surfaces.
   4. Where water repellents are to be used on or near masonry, delay application of these chemicals until after cleaning.

B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to masonry repair Sections. Patch holes in mortar joints according to masonry repointing Sections.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include material descriptions and application instructions.
   2. Include test data substantiating that products comply with requirements.

1.7 INFORMATIONAL SUBMITTALS

A. Preconstruction Test Reports: For cleaning materials and methods.

B. Cleaning program.

1.8 QUALITY ASSURANCE

A. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used; protection of surrounding materials; and control of runoff during operations. Include provisions for supervising worker performance and preventing damage.
   1. If materials and methods other than those indicated are proposed for any phase of cleaning work, add a written description of such materials and methods, including evidence of successful use on comparable projects and demonstrations to show their effectiveness for this Project.

B. Mockups: Prepare mockups of cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
   1. Cleaning: Clean an area approximately 25 sq. ft. for each type of masonry and surface condition.
      a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
      b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry-cleaning work to be performed according to product manufacturers' written instructions and specified requirements.

B. Clean masonry surfaces only when air temperature is 40 deg F (4 deg C) and above and is predicted to remain so for at least seven days after completion of cleaning.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F (60 to 71 deg C).

C. Mold, Mildew, and Algae Remover, Job Mixed: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 5 quarts (5 L) of 5 percent sodium hypochlorite (bleach), and 15 quarts (15 L) of hot water for every 5 gal. (20 L) of solution required.

D. Nonacidic Gel Cleaner: Manufacturer's standard gel formulation, with pH between 6 and 9, that contains detergents with chelating agents and is specifically formulated for cleaning masonry surfaces.

E. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.

F. Mild-Acid Cleaner: Manufacturer's standard mild-acid cleaner containing no muriatic (hydrochloric), hydrofluoric, or sulfuric acid; or ammonium bifluoride or chlorine bleaches.

G. Acidic Cleaner: Manufacturer's standard acidic masonry cleaner composed of hydrofluoric acid or ammonium bifluoride blended with other acids, detergents, wetting agents, and inhibitors.

H. One-Part Limestone Acidic Cleaner: Manufacturer's standard one-part acidic formulation for cleaning limestone.

I. Two-Part Chemical Cleaner: Manufacturer's standard system consisting of potassium- or sodium-hydroxide-based, alkaline prewash cleaner and acidic afterwash cleaner that does not contain hydrofluoric acid.

2.2 ACCESSORY MATERIALS

A. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, glazed masonry, and polished stone surfaces from damaging effects of acidic and alkaline masonry cleaners.

2.3 CHEMICAL CLEANING SOLUTIONS

A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.

PART 3 - EXECUTION

3.1 PROTECTION

A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
   1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

2. Do not apply chemical solutions during winds of enough force to spread them to unprotected surfaces.
3. Neutralize alkaline and acid wastes before disposal.
4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

B. Remove any devices or equipment adjacent to immediate work area and store during masonry cleaning. Reinstall when masonry cleaning is complete.
1. Provide temporary rain drainage during work to direct water away from building.

3.2 PRELIMINARY CLEANING

A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.

B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.
1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
2. Remove paint and calking with alkaline paint remover.
   a. Repeat application up to two times if needed.
3. Remove asphalt and tar with solvent-type paste paint remover.
   a. Apply paint remover only to asphalt and tar by brush without prewetting.
   b. Allow paint remover to remain on surface for 10 to 30 minutes.
   c. Repeat application if needed.

3.3 CLEANING MASONRY, GENERAL

A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 20 feet away by Architect.

B. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.

C. Use only those cleaning methods indicated for each masonry material and location.
1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
   a. Equip units with pressure gages.
   b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
   c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.

D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.
1. Keep wall wet below area being cleaned to prevent streaking from runoff.

E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.

F. Water Application Methods:
1. Water-Spray Applications: Unless otherwise indicated, hold spray nozzle at least 6 inches from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.

G. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush or spray application.
1. Do not spray apply at pressures exceeding 50 psi. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.

H. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

I. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

3.4 FINAL CLEANING

A. Clean adjacent nonmasonry surfaces of spillage and debris.
1. Use detergent and soft brushes or cloths.

B. Remove masking materials, leaving no residues that could trap dirt.

END OF SECTION 040110

SECTION 040120 – UNIT MASONRY RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes the following:
   1. Cutting and chipping.
   2. Repairing of cracks.
   3. Restoration of unit masonry
   4. Installation of steel lintels in masonry walls.
   5. Painting of steel uncovered during the work.
   6. Cleaning.

B. Related Requirements:
   1. Section 013516 “Alteration Project Procedures” for special procedures for alteration work.
   2. Section 002419 "Selective Demolition" for demolition and removal of selected portions of building or structure.
   3. Section 055000 “Metal Fabrications” for furnishing steel lintels.

1.3 ALLOWANCES

A. Allowances for maintenance of unit masonry are specified in Section 012100 "Allowances."
   1. Field quality-control testing is part of testing and inspecting allowance.

1.4 UNIT PRICES

A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."
   1. Unit prices apply to authorized work covered by quantity allowances.
   2. Unit prices apply to authorized additions to and deletions from the Work as authorized by Change Orders.

B. General: Unit prices include the cost of preparing existing construction to receive the work indicated and costs of field quality control required for units of work completed.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to unit masonry maintenance including, but not limited to, the following:
      a. Verify repair and restoration personnel, equipment, and facilities needed.
      b. Materials, material application, sequencing, tolerances, and required clearances.
      c. Quality-control program.
      d. Coordination with other Contractors.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include material descriptions and application instructions.
   2. Include test data substantiating that products comply with requirements.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For masonry repair specialist and manufacturers.

B. Material Certificates: For each type of material supplied for mixing or adding to products at Project site.

C. Product Test Reports: For each product, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Field quality-control reports.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

B. Store cementitious materials off the ground, under cover, and in a dry location.

C. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.

1.9 FIELD CONDITIONS

A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.

1.10 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM C881 Specification for Epoxy-Resin-Base Bonding System for Concrete.
   2. ASTM C928 Specification for Packaged, Dry Rapid-Hardening Cementitious Materials for Concrete Repairs.
   3. ASTM C1107 Specification for Packaged Dry, Hydraulic-Cement Grout (Non- shrink).

1.11 QUALITY ASSURANCE

A. Repair and restoration of existing masonry surfaces shall be performed by a skilled and experienced subcontractor specializing in the restoration of masonry with at least five years experience in the type of work involved.

B. Repair and restoration of existing stone and unit masonry work shall achieve security, strength, and weather protection, as applicable and required, and shall preserve the integrity and continuity of fire-rated assemblies.

C. Repair and restoration of existing masonry work shall successfully duplicate undisturbed adjacent finishes, colors, textures, and profiles. Where there is a dispute as to whether or not duplication is successful or has been achieved to a reasonable degree, the Engineer's judgment shall be final.

1.12 COORDINATION

A. The building involved in this work will be in continuous operation during the construction period. This will require that the Contractor plan the Work carefully to work around unavoidable obstacles in the prosecution of the Work. It will require further that the Contractor complete some new construction facilities required in the renovation work before proceeding with the masonry restoration work.

B. Provide such additional temporary facilities as may be required to facilitate continuous, unobstructed station or building operations during transitional construction work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: For repair products, obtain each color, grade, finish, type, and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.

2.2 MATERIALS, EQUIPMENT AND FACILITIES

A. Requirements: Provide all materials, equipment, tools, appurtenances, facilites, and services as required for performing and completing all repair and restoration of existing stone and unit masonry as indicated.

B. Equipment, Tools, and Materials: Provide appropriate and proper equipment, tools, and materials for the chipping and air-pressure cleaning of cracks in masonry, for pressure injection grouting of cracks in mortar joints, for sandblasting or water-blasting of masonry surfaces, and for hose cleaning of masonry.

C. Unit Masonry Materials: Where concrete masonry units are damaged and require replacement, provide new masonry units that match exactly the type of adjacent masonry surfaces.
   1. Replacement concrete masonry units require approval of the Architect/Engineer before they may be used in the work.

D. Mortar Bonding Agent: Adhesive for the bonding of new mortar and grout to existing masonry and mortar shall be an epoxy adhesive meeting requirement of ASTM C881, of type required for the conditions.

E. Mortar Repair Materials:
   1. Mortar: Mortar for joints and tuckpointing shall be an epoxy mortar, polymer-fortified mortar, or similar high-strength bonding mortar conforming with ASTM C928. Minimum compressive strength at 28 days shall be 2,500 psi.
   2. Sand: Sand shall be a clean, washed, kiln-dried, fine sand, all passing a U.S. Standard No. 16 sieve.

F. Grout: Grout for pressure-injection grouting shall be a high-strength, nonshrink, cementitious, adhesive grout conforming with ASTM C1107, Grade C, or a high-strength, non-shrink, manufactured epoxy adhesive grout. Minimum compressive strength at 28 days shall be 4,000 psi.

G. Cleaning Agent: Mild solution of hydrochloric acid or muriatic acid, for washing of stubborn stains on masonry.

2.3 MISCELLANEOUS MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I, II, or III unless otherwise indicated.

B. Water: Potable.

2.4 MIXES

A. General: Mix products, in clean containers, according to manufacturer's written instructions.
   1. Do not add water, thinners, or additives unless recommended by manufacturer.
   2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
   3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

PART 3 - EXECUTION

3.1 UNIT MASORNY REPAIR, GENERAL

A. Perform cutting, chipping, patching/restoring work, and cleaning in a manner to prevent damage to other work, and as required to return exterior building surfaces to essentially their original condition and configuration.

B. Major cracks shall be repaired and filled by pressure-injection grouting. All other cracks shall be repaired in the manner most appropriate and as required for weatherproofing or waterproofing the building or structure.

C. Do not cut or alter structural members when not indicated without prior approval of the Architect/Engineer.

D. Finish or refinish as required to match adjacent finishes.

3.2 CUTTING AND CHIPPING

A. Cutting and chipping work shall be neatly and accurately performed with proper tools and equipment. Cuts shall be of minimum size required for the work. Check the locations carefully of existing steel reinforcement before cutting or chipping.

B. Existing work to remain shall be properly protected to prevent damage from cutting and chipping operations.

3.3 REPAIRING OF CRACKS

A. Cracks shall be repaired and filled with grout by the pressure-injection process. Masonry joint cracks shall be mapped, and the injection shall be on center-to-center spacings as necessary to achieve proper structural bonding. Replace all cut stone and masonry units that have cracks across the face.

B. Adhesive material shall be mixed with grout in proportion necessary to provide structural bonding of concrete. Grout material shall be inserted into cracks by pressure-injection grouting in accordance with the manufacturer's installation instructions and recommendations.

C. Minor cracks too small for injection grouting shall be repaired as specified in Article 3.4 for restoration work.

D. Small holes, cracks, and other imperfections to be painted shall be suitably primed and patched with a compound recommended by the manufacturer of the paint to be applied to these surfaces as specified in Section 099123 - Interior Painting.

3.4 RESTORATION WORK

A. Preparation of Existing Surfaces: Where masonry is cracked or spalled, cut or chip out to solid surface. Use power wire brush and high-pressure air to clean masonry of dirt, dust, and loose particles. Clean exposed reinforcing bars with power wire brushing to remove all visible corrosion.

B. Repairing of Masonry:
1. Repairing and patching of existing masonry surfaces and joints shall be expertly performed with specified adhesive, mortar, and grout materials. At completion, patched surfaces shall match adjacent existing surfaces as closely as possible.
2. Mortar bonding agent, mortar, and grout shall be applied or installed where indicated, or where otherwise required, in accordance with the manufacturer's instructions and recommendations.
3. Where necessary to build out cut, spalled, or chipped masonry surfaces, mix mortar bonding agent, mortar, and sand into a special mortar, and apply in layers as required to fill out or build up surfaces. Float, trowel, or texture surfaces to match adjacent existing surfaces.
4. Where indicated or required to replace existing, damaged cut stone or concrete masonry units, expertly cut out damaged units with masonry saw or cutting wheel. Clean out all loose particles and dust with air-pressure cleaning. Then install new units to match adjacent existing masonry surfaces as closely as possible, including joint treatment.

C. Tuckpointing:
1. Joints of cut stone and concrete unit masonry shall be routed out and tuckpointed as herein specified. Only such tuckpointing shall be performed as required to put all joints of the building in good repair.
2. Faulty joints to be tuckpointed shall be routed out the full width of the existing joint with a machine masonry cutting wheel to a minimum depth of 3/8 inch into the existing mortar. Newly routed joints shall be washed clean before tuckpointing.

D. Tuckpointing mortar shall be the repair mortar specified in Article 2.

3.5 LINTELS

A. Provide steel lintels where indicated and where openings of more than 12 inches are indicated without structural steel or other supporting lintels.

B. Provide minimum bearing of 6 inches at each jamb unless otherwise indicated.

3.6 PAINTING STEEL UNCOVERED DURING THE WORK

A. Notify Architect/Engineer if steel is exposed during masonry removal. Where Architect/Engineer determines that steel is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:
   1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning", SSPC-SP 3, "Power Tool Cleaning" or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning", as applicable to comply with paint manufacturer's recommended preparation.
   2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 inch. notify Architect/Engineer before proceeding.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.

B. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

C. Notify inspectors and Architect/Engineer's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until inspectors and Architect/Engineer's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.8 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.

B. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

3.9 CLEANING

A. Where existing masonry surfaces are indicated to be cleaned or washed to remove dirt, dust, and stains, such surfaces shall be washed clean to an even and uniform effect, free of stains and blemishes.

B. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.
   1. Do not use metal scrapers or brushes.
   2. Do not use acidic or alkaline cleaners.

C. Clean adjacent non-masonry surfaces. Use detergent and soft brushes or cloths.

D. Remove masking materials, leaving no residues that could trap dirt.

END OF SECTION 040120

MONTGOMERY COUNTY NY

Made of Something Stronger

DIVISION 5

Metals

SECTION 053100 – STEEL DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Noncomposite form deck.

B. Related Requirements:

   1. Section 033000 "Cast-in-Place Concrete" for normal-weight and lightweight structural concrete fill over steel deck.
   2. Section 055000 "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.

1.3 ACTION SUBMITTALS

A. Product Data:
   1. Noncomposite form deck.

B. Shop Drawings:

   1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Product Certificates: For each type of steel deck.

C. Test and Evaluation Reports:
   1. Product Test Reports: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:
      a. Power-actuated mechanical fasteners.
   2. Research Reports: For steel deck, from ICC-ES showing compliance with the building code.

D. Qualification Statements: For welding personnel and testing agency.

E. Welding Qualifications: Qualify procedures and personnel in accordance with SDI QA/QC and the following welding codes:
   1. AWS D1.1/D1.1M.
   2. AWS D1.3/D1.3M.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store products in accordance with SDI MOC3. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck in accordance with AISI S100.

2.2 NONCOMPOSITE FORM DECK

A. Fabrication of Noncomposite Form Deck: Fabricate ribbed-steel sheet noncomposite deck panels used as a form to comply with SDI NC, with the minimum section properties indicated, and with the following:
   1. Galvanized-Steel Sheet: ASTM A653/A653M, Structural Steel (SS), Grade 80 (550), [G60 (Z180) zinc coating.
   2. Profile Depth: 1-1/2 inches (38 mm).
   3. Design Uncoated-Steel Thickness: 0.0358 inch (0.91 mm)
   4. Span Condition: Simple span.
   5. Side Laps: Overlapped or interlocking seam at Contractor's option.

2.3 ACCESSORIES

A. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 (4.8-mm) minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), of same material and finish as deck, and of thickness and profile recommended by SDI standards for overhang and slab depth.

G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.

H. Galvanizing Repair Paint: ASTM A780/A780M.

I. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories in accordance with SDI C, SDI NC, and SDI RD, as applicable; manufacturer's written instructions; and requirements in this Section.

B. Install temporary shoring before placing deck panels if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install in accordance with deck manufacturer's written instructions.

3.3 INSTALLATION OF FLOOR DECK

A. Fasten floor-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:
   1. Weld Diameter: 5/8 inch (16 mm), nominal.
   2. Weld Spacing:
      a. Weld edge ribs of panels at each support. Space additional welds an average of 16 inches (400 mm) apart, but not more than 18 inches (460 mm) apart.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of one-half of the span or 36 inches (1 m), and as follows:
   1. Mechanically fasten with self-drilling, No. 10 (4.8-mm-) diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm), with end joints as follows:
   1. End Joints: Lapped or butted at Contractor's option.

D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure in accordance with SDI recommendations unless otherwise indicated.

E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, in accordance with SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.

3.4 REPAIR

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint in accordance with ASTM A780/A780M and manufacturer's written instructions.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Tests and Inspections:
   1. Special inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck in accordance with quality-assurance inspection requirements of SDI QA/QC.
      a. Field welds will be subject to inspection.
   2. Steel decking will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 053100

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Steel framing and supports for mechanical and electrical equipment.
   2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
   3. Miscellaneous steel trim including steel angle corner guards and steel edgings.
   4. Loose bearing and leveling plates for applications where they are not specified in other Sections.

B. Products furnished, but not installed, under this Section:
   1. Loose steel lintels.
   2. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
   3. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

C. Related Requirements:
   1. Section 033000 "Cast-in-Place Concrete" for installing anchor bolts, and other items cast into concrete.
   2. Section 040120 "Unit Masonry Restoration" for installing loose lintels, anchor bolts, and other items built into unit masonry.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work.
   1. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:
   1. Paint products.
   2. Grout.

B. Shop Drawings: Show fabrication and installation details for metal fabrications.

1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

C. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Mill Certificates: Signed by stainless-steel manufacturers, certifying that products furnished comply with requirements.

B. Welding certificates.

C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

D. Research/Evaluation Reports: For post-installed anchors, from ICC-ES.

1.6 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

B. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

C. Steel Tubing: ASTM A 500, cold-formed steel tubing.

D. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated.

A. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

2.3 FASTENERS

A. General: Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.

B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with hex nuts, ASTM A 563 (ASTM A 563M); and, where indicated, flat washers.

C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593 (ASTM F 738M); with hex nuts, ASTM F 594 (ASTM F 836M); and, where indicated, flat washers; Alloy Group 1 (A1).

D. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers.
   1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

E. Eyebolts: ASTM A 489.

F. Machine Screws: ASME B18.6.3 (ASME B18.6.7M).

G. Lag Screws: ASME B18.2.1 (ASME B18.2.3.8M).

H. Wood Screws: Flat head, ASME B18.6.1.

I. Plain Washers: Round, ASME B18.22.1 (ASME B18.22M).

J. Lock Washers: Helical, spring type, ASME B18.21.1 (ASME B18.21.2M).

K. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

L. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47/A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.

M. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.
   1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.
   2. Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

N. Slotted-Channel Inserts: Cold-formed, hot-dip galvanized-steel box channels (struts) complying with MFMA-4, 1-5/8 by 7/8 inches by length indicated with anchor straps or studs not less than 3 inches long

at not more than 8 inches o.c. Provide with temporary filler and tee-head bolts, complete with washers and nuts, all zinc-plated to comply with ASTM B 633, Class Fe/Zn 5, as needed for fastening to inserts.

2.4 MISCELLANEOUS MATERIALS

A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
   1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

B. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.

E. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
   1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
   1. Fabricate units from slotted channel framing where indicated.
   2. Furnish inserts for units installed after concrete is placed.

C. Fabricate steel girders for wood frame construction from continuous steel shapes of sizes indicated.
   1. Provide bearing plates welded to beams where indicated.
   2. Drill or punch girders and plates for field-bolted connections where indicated.
   3. Where wood nailers are attached to girders with bolts or lag screws, drill or punch holes at 24 inches o.c.

D. Galvanize miscellaneous framing and supports where indicated.

E. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.7 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
   1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.

C. Galvanize exterior miscellaneous steel trim.

D. Prime exterior miscellaneous steel trim with zinc-rich primer.

2.8 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

B. Galvanize plates.

C. Prime exterior plates with zinc-rich primer.

2.9 LOOSE STEEL LINTELS

A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.

B. Size loose lintels to provide bearing length at each side of openings equal to 1/12 of clear span but not less than 6 inches unless otherwise indicated.

C. Galvanize loose steel lintels located in exterior walls.

D. Prime exposed loose steel lintels located in exterior walls with zinc-rich primer.

2.10 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work.
   1. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.11 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.12 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
   1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.

C. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
   1. Shop prime with universal shop primer.
   2. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 3, "Power Tool Cleaning."

D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
   1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications.
   1. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.
   1. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
   1. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.3 INSTALLING BEARING AND LEVELING PLATES

A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces.
   1. Clean bottom surface of plates.

B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts.
   1. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with nonshrink grout.
   2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055000

MONTGOMERY COUNTY NY

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DIVISION 6

Woods, Plastics and Composites

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Framing with dimensional lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood furring and grounds.
5. Plywood backing panels.

B. Related Requirements:
1. Section 064116 “Plastic-Laminate-Faced Architectural Cabinets” for blocking required in interior wall framing.
2. Section 092216 “Non-Structural Metal Framing” for non-load-bearing steel framing systems for interior gypsum board assemblies.
3. Section 099123 “Interior Painting” for painting exposed plywood backing panels..

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NHLA: National Hardwood Lumber Association.
3. NLGA: National Lumber Grades Authority.
4. SPIB: The Southern Pine Inspection Bureau.
5. WCLIB: West Coast Lumber Inspection Bureau.
6. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:
   1. Preservative-treated wood.
   2. Power-driven fasteners.
   3. Powder-actuated fasteners.
   4. Metal framing anchors.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer should be experienced in performing work of this Section and should have specialized in installation of work similar to that required for this project.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation.
   1. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
   3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: **19 percent** unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
   1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. **Do not use inorganic boron (SBX) for sill plates.**

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawl spaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

A. Non-Load-Bearing Interior Partitions: Construction or No. 2 and any of the following species:
   1. Mixed southern pine; SPIB.
   2. Spruce-pine-fir; NLGA.

B. Load-Bearing Walls: No. 2 or better grade and any of the following species:
   1. Douglas fir-larch; WCLIB or WWPA.
   2. Spruce-pine-fir; NLGA.

C. Other framing: No. 2 or better grade and any of the following species:
   1. Douglas fir-larch; WCLIB or WWPA.
   2. Spruce-pine-fir; NLGA.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
   1. Blocking.
   2. Nailers.
   3. Rooftop equipment bases and support curbs.
   4. Cants.
   5. Furring.
   6. Grounds.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:
   1. Mixed southern pine; SPIB.
   2. Spruce-pine-fir; NLGA.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
   1. Mixed southern pine, No. 2 grade; SPIB.
   2. Spruce-pine-fir, Construction or 2 Common grade; NLGA.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: DOC PS 1, Exterior, AC in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
   1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Metal Framing: ASTM C 1002, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).

G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
   1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
   2. Material for wood-preservative-treated lumber and where indicated: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.7 METAL FRAMING ANCHORS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Simpson Strong-Tie Co., Inc.
   2. USP Structural Connectors.

B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Hot-Dip Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 (Z550) coating designation; and not less than 0.036 inch (0.9 mm) thick.
   1. Use for wood-preservative-treated lumber and where indicated.

D. Stainless-Steel Sheet: ASTM A 666, Type 304.
   1. Use for exterior locations and where indicated.

2.8 MISCELLANEOUS MATERIALS

A. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
   1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Flexible Flashing: Self-adhesive, rubberized-asphalt compound, bonded to a high-density, polyethylene film to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels.

D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
   1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
   1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
   2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
   3. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal-thickness.

H. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber.
   1. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

I. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
   1. Use inorganic boron for items that are continuously protected from liquid water.

2. Use copper naphthenate for items not continuously protected from liquid water.

J. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

K. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
2. ICC-ES evaluation report for fastener.

L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials.
1. Make tight connections between members.
2. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work.
1. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading.
1. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material.
1. Remove temporary grounds when no longer required.

3.3 WOOD FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal-size furring horizontally and vertically at 24 inches o.c.

C. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal-size furring vertically at 16 inches o.c.

3.4 WALL AND PARTITION FRAMING INSTALLATION

A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction, unless otherwise indicated.
1. For interior partitions and walls, provide 2-by-6-inch nominal- and 2-by-4-inch nominal-size wood studs spaced 16 inches o.c., unless otherwise indicated.
2. Provide continuous horizontal blocking at mid-height of partitions more than 96 inches high, using members of 2-inch nominal thickness and of same width as wall or partitions.

B. Construct corners and intersections with three or more studs.

C. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.
   1. For non-load-bearing partitions, provide double-jamb studs and headers not less than 4-inch nominal depth for openings 48 inches and less in width, 6-inch nominal depth for openings 48 to 72 inches in width, 8-inch nominal depth for openings 72 to 120 inches in width, and not less than 10-inch nominal depth for openings 10 to 12 feet in width.
   2. For load-bearing walls, provide double-jamb studs for openings 60 inches and less in width, and triple-jamb studs for wider openings. Provide headers of depth indicated.

3.5 PROTECTION

A. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment.
   1. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 064116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Plastic-laminate-clad architectural cabinets.
   2. Cabinet hardware and accessories.
   3. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

B. Related Requirements:
   1. Section 061053 “Miscellaneous Rough Carpentry” for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.
   2. Section 123661.16 "Solid Surfacing Countertops."

1.3 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For plastic-laminate-faced architectural cabinets.
   1. Include plans, elevations, sections, and attachment details.
   2. Show large-scale details.
   3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
   4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.

A. Samples: For each exposed product and for each color and texture specified, in manufacturer's or fabricator's standard size.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

B. Product Certificates: For each type of product.

C. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For plastic-laminate-clad architectural cabinets to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

B. Installer Qualifications: Manufacturer of products.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.

C. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the Architectural Woodwork Standards for grades of cabinets indicated for construction, finishes, installation, and other requirements.

B. Grade: Custom.

C. Type of Construction: Face frame.

D. Cabinet, Door, and Drawer Front Interface Style: Reveal overlay.

E. Reveal Dimension: 1/2 inch.

F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Formica Corporation.
      b. Wilsonart International; Div. of Premark International, Inc.
      c. Nevamar Company, LLC; Decorative Products Division.

G. Laminate Cladding for Exposed Surfaces:
   1. Horizontal Surfaces: Grade HGS.
   2. Post-formed Surfaces: Grade HGP.
   3. Vertical Surfaces: Grade HGS.
   4. Edges: Matching laminate in color, pattern, and finish.
   5. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts.

H. Materials for Semi-exposed Surfaces:
   1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.
      a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch thick, matching laminate in color, pattern, and finish.
      b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
      c. For semi-exposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
   2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
   3. Drawer Bottoms: Thermoset decorative panels.

I. Dust Panels: 1/4-inch plywood or tempered hardboard above compartments and drawers unless located directly under tops.

J. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

K. Drawer Construction: Fabricate with exposed fronts fastened to sub-front with mounting screws from interior of body.
   1. Join sub-fronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners.

L. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As selected by Architect from laminate manufacturer's full range in the following categories:
      a. Solid colors, gloss or matte finish.
      b. Wood grains, gloss or matte finish.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 5 to 10 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
   1. Medium-Density Fiberboard: ANSI A208.2, Grade 130.
   2. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
   3. Softwood Plywood: DOC PS 1, medium-density overlay.
   4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.
   5. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087111 "Door Hardware (Descriptive Specification)."

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100 degrees of opening, self-closing.

C. Back-Mounted Pulls: BHMA A156.9, B02011.

D. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

E. Catches: Roller catches, BHMA A156.9, B03071.

F. Adjustable Shelf Standards and Supports: BHMA A156.9, B04102; with shelf brackets, B04112.

G. Shelf Rests: BHMA A156.9, B04013; metal.

H. Drawer Slides: BHMA A156.9.
   1. Grade 1 and Grade 2: Side mounted; full-extension type; zinc-plated steel with polymer rollers.
   2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-overtravel-extension type; zinc-plated-steel ball-bearing slides.
   3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
   4. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1.
   5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
   6. For computer keyboard shelves, provide Grade 1.
   7. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-100.

I. Aluminum Slides for Sliding Glass Doors: BHMA A156.9, B07063.

J. Door Locks: BHMA A156.11, E07121.

K. Drawer Locks: BHMA A156.11, E07041.

L. Door and Drawer Silencers: BHMA A156.16, L03011.

M. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
   1. Satin Stainless Steel: BHMA 630.

N. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

C. Adhesive for Bonding Plastic Laminate: Contact cement.
   1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.5 FABRICATION

A. Fabricate architectural cabinets to dimensions, profiles, and details indicated.

B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
   1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
   2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.

C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

D. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual."
   1. For glass in wood frames, secure glass with removable stops.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.2 INSTALLATION

A. Architectural Woodwork Standards Grade: Install cabinets to comply with quality standard grade of item to be installed.

B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.

C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.

D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.
   1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
   2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
   3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semi-exposed surfaces.

END OF SECTION 064116

SECTION 064219 - PLASTIC-LAMINATE-FACED WOOD PANELING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Plastic-laminate-faced wood paneling.

B. Related Requirements:
   1. Section 061053 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing paneling that is concealed within other construction before paneling installation.

1.3 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that paneling can be installed as indicated.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For plastic-laminate-faced wood paneling.
   1. Include plans, elevations, sections, and attachment details.
   2. Show locations and sizes of furring and blocking, including concealed blocking specified in other Sections.

C. Samples: For each exposed product and for each color and texture specified, in manufacturer's or fabricator's standard size.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

B. Product Certificates: For each type of product.

C. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For plastic-laminate-faced paneling to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

B. Installer Qualifications: Fabricator of products.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver paneling until painting and similar operations that might damage paneling have been completed in installation areas. Store paneling in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Field Measurements: Where paneling is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Locate concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed/concealed by construction and indicate measurements on Shop Drawings.

C. Established Dimensions: Where paneling is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 - PRODUCTS

2.1 PANELING, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of plastic-laminate-faced wood paneling (decorative laminate surfacing) indicated for construction, finishes, installation, and other requirements.

2.2 PLASTIC-LAMINATE-FACED WOOD PANELING

A. Grade: Custom.

B. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3 and the following requirements:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Formica Corporation.
   b. Wilsonart International; Div. of Premark International, Inc.
   c. Nevamar Company, LLC; Decorative Products Division.
2. Faces: Grade VGF.
3. Exposed Edges: Same as faces.

C. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed surfaces complying with the following requirements:
1. As selected by Owner from laminate manufacturer's full range in the following categories:
   a. Wood grains, gloss or matte finish.
2. Grain Direction: Vertical.

D. Panel Core: As indicated on Drawings.

E. Exposed Panel Edges: Legs of metal channels forming reveals.

F. Panel Reveals: Extruded aluminum shapes, providing a straight, uniform reveal between panels or at the edge of panels, as indicated on Drawings.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to:
   a. Aluminum Millwork Trims by Fry Reglet Corporation (www.fryreglet.com) or equal:
      1) Millwork Reveal: MWR5050.
      2) 4” Millwork Reveal Base: MWRB50400.
      3) Millwork Reveal F: MWRF5050.
   b. Finish: Anodized.
   c. Color: Clear or color as selected by Owner from manufacturer’s full range.

G. Adhesives for Bonding Plastic Laminate: Contact cement.
1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

H. Assemble panels by gluing and concealed fastening.

2.3 MATERIALS

A. Materials, General: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.

B. Wood Moisture Content: 5 to 10 percent.

C. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.
1. MDF: ANSI A208.2, Grade 130.
2. Particleboard (Medium Density): ANSI A208.1, Grade M-2-Exterior Glue.

2.4 INSTALLATION MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls.

C. Installation Adhesive: Product recommended by panel fabricator for each substrate for secure anchorage.

2.5 FABRICATION

A. Complete fabrication, including assembly, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
   1. Notify Architect seven days in advance of the dates and times paneling fabrication will be complete.

B. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition paneling to humidity conditions in installation areas.

B. Before installing paneling, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

A. Grade: Install paneling to comply with quality standard grade of paneling to be installed.

B. Install paneling level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches. Install with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
   1. For flush paneling with revealed joints, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/32 inch.

C. Anchor paneling to supporting substrate with blind nailing. Do not use face fastening.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective paneling, where possible, to eliminate defects. Where not possible to repair, replace paneling. Adjust for uniform appearance.

B. Clean paneling on exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064219

MONTGOMERY COUNTY NY

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DIVISION 7

Thermal and Moisture Protection

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Glass-fiber blanket insulation
   2. Mineral-wool blanket insulation.

B. Related Requirements:
   1. Section 092900 “Gypsum Board” for sound attenuation blanket used as acoustic insulation.
   2. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support insulation.
   3. Section 220719 “Plumbing Piping Insulation” for insulation specified as part of Plumbing Contract
   4. Section 230713 “Duct Insulation” for insulation specified as part of Mechanical Contract.
   5. Section 230719 “HVAC Piping Insulation” for insulation specified as part of Mechanical Contract

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each product, for tests performed by a qualified testing agency.

B. Research Reports: For foam-plastic insulation, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Glass-Fiber Blanket Insulation, Unfaced: ASTM C665, Type I; passing ASTM E136 for combustion characteristics.
   1. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
   2. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
   3. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.

2.2 MINERAL-WOOL BLANKET INSULATION

A. Mineral-Wool Blanket Insulation, Unfaced: ASTM C665, Type I (blankets without membrane facing); consisting of fibers; passing ASTM E136 for combustion characteristics.
   1. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
   2. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
   3. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.

2.3 VAPOR RETARDERS

A. Polyethylene Vapor Retarders: ASTM D 4397, 6 mils thick, with maximum permeance rating of 0.13 perm .

B. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

C. Vapor-Retarder Fasteners: Pancake-head, self-tapping steel drill screws; with fender washers.

D. Single-Component Nonsag Urethane Sealant: ASTM C 920, Type I, Grade NS, Class 25, Use NT related to exposure, and Use O related to vapor-barrier-related substrates.

E. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.

2.4 INSULATION FASTENERS

A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.

B. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-thick galvanized-steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.

C. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.

2.5 AUXILIARY MATERIALS

A. Insulation for Miscellaneous Voids:
1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.

B. Asphalt Coating for Cellular-Glass Block Insulation: Cutback asphalt or asphalt emulsion of type recommended by manufacturer of cellular-glass block insulation.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Install insulation with manufacturer's R-value label exposed after insulation is installed.

D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
5. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.
a. Exterior Walls: Set units with facing placed toward interior of construction as indicated on Drawings.
b. Interior Walls: Set units with facing placed as indicated on Drawings toward areas of high humidity.

A. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
   1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).

3.4 INSTALLATION OF VAPOR RETARDERS

A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage system as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs.
   1. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 16 inches o.c.
   2. Before installing vapor retarders, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.
   3. Firmly attach vapor retarders to metal framing and solid substrates with vapor-retarder fasteners as recommended by vapor-retarder manufacturer.

C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.

D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.5 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.

B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072100

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Penetrations in fire-resistance-rated walls.
   2. Penetrations in horizontal assemblies.
   3. Penetrations in smoke barriers.

B. Related Requirements:
   1. Section 078443 "Joint Firestopping" for joints in or between fire-resistance-rated construction and in smoke barriers.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.
   1. Indicate design number for each firestop proposed to be used which is detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
   2. State the specific locations where each firestop system is proposed to be installed.

B. Product Schedule: For each penetration firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing and inspecting agency.
   1. Engineering Judgments: Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping system, submit illustration, with modifications marked, approved by penetration firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly. Obtain approval of authorities having jurisdiction prior to submittal.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Product Test Reports: For each penetration firestopping system, for tests performed by a qualified testing agency.

1.6 CLOSEOUT SUBMITTALS

A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not install penetration firestopping system when ambient or substrate temperatures are outside limits permitted by penetration firestopping system manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.

B. Install and cure penetration firestopping materials per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.9 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping systems can be installed according to specified firestopping system design.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping systems.

C. Where firestopping is not assigned to a single-source firestop specialty contractor, the installation of each scope of work is to be performed jurisdictionally correct per existing trade agreements.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics:
   1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
   2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
      a. Penetration firestopping systems shall bear classification marking of a qualified testing agency.
         1) UL in its "Fire Resistance Directory."
         2) Intertek Group in its "Directory of Listed Building Products."
         3) FM Global in its "Building Materials Approval Guide."

2.2 MANUFACTURER

A. Basis-of-Design Product: The performance requirements for the insulating concrete forms is based upon the following:
   1. Hilti, Inc.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:
   1. A/D Fire Protection Systems Inc.
   2. Grace Construction Products.
   3. Johns Manville.
   4. 3M Fire Protection Products.
   5. Tremco, Inc.; Tremco Fire Protection Systems Group.
   6. USG Corporation.

2.3 PENETRATION FIRESTOPPING SYSTEMS

A. Penetration Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.

B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
   1. F-Rating: Not less than the fire-resistance rating of constructions penetrated.

C. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
   1. Horizontal assemblies include ceiling membranes of roof/ceiling assemblies.
   2. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
   3. T-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.

D. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.
   1. L-Rating: Not exceeding 5.0 cfm/sq. ft of penetration opening at and no more than 50-cfm cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.

E. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

F. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.
   1. Permanent forming/damming/backing materials.
   2. Substrate primers.
   3. Collars.
   4. Steel sleeves.

2.4 FILL MATERIALS

A. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer sleeve lined with an intumescent strip, a flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.

B. Latex Sealants: Single-component latex formulations that do not re-emulsify after cure during exposure to moisture.

C. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.

D. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced intumescent elastomeric sheet bonded to galvanized-steel sheet.

E. Intumescent Putties: Nonhardening, water-resistant, intumescent putties containing no solvents or inorganic fibers.

F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

G. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.

H. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

I. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants.

2.5 MIXING

A. Penetration Firestopping Materials: For those products requiring mixing before application, comply with penetration firestopping system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Before installing penetration firestopping systems, clean out openings immediately to comply with manufacturer's written instructions and with the following requirements:

1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping materials.
2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping materials. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

A. Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION

A. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.

B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.

C. Install fill materials by proven techniques to produce the following results:
1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

A. Wall Identification: Permanently label walls containing penetration firestopping systems with the words "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS," using lettering not less than 3 inches high and with minimum 0.375-inch strokes.
1. Locate in accessible concealed floor, floor-ceiling, or attic space at 15 feet from end of wall and at intervals not exceeding 30 feet.

B. Penetration Identification: Identify each penetration firestopping system with legible metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of penetration firestopping system edge so labels are visible to anyone seeking to remove penetrating items or firestopping systems. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage."
2. Contractor's name, address, and phone number.
3. Designation of applicable testing and inspecting agency.
4. Date of installation.
5. Manufacturer's name.
6. Installer's name.

3.5 FIELD QUALITY CONTROL

A. Owner will engage a qualified testing agency to perform tests and inspections.

B. Where deficiencies are found or penetration firestopping is damaged or removed because of testing, repair or replace penetration firestopping to comply with requirements.

C. Proceed with enclosing penetration firestopping with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion.
   1. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

3.7 PENETRATION FIRESTOPPING SCHEDULE

A. Where UL-classified systems are indicated, they refer to system numbers in UL's "Fire Resistance Directory" under product Category XHEZ.
   1. Penetration Firestopping Systems for Metallic Pipes, Conduit, or Tubing.
   2. Penetration Firestopping Systems for Nonmetallic Pipe, Conduit, or Tubing.
   3. Penetration Firestopping Systems for Electrical Cables.
   4. Penetration Firestopping Systems for Insulated Pipes.
   5. Penetration Firestopping Systems for Miscellaneous Electrical Penetrants.
   6. Penetration Firestopping Systems for Miscellaneous Mechanical Penetrants.

3.8 SCHEDULE OF COMMON FIRESTOP SYSTEMS

A. Basis of design: Hilti, Inc.

CONCRETE FLOORS			CONCRETE OR BLOCK WALLS		
TYPE OF PENETRANT	F-RATING (HR)	BASIS OF DESIGN UL SYSTEM	TYPE OF PENETRANT	F-RATING (HR)	BASIS OF DESIGN UL SYSTEM
CIRCULAR BLANK OPENINGS	1	F-A-0006, C-AJ-0055, C-AJ-0090	CIRCULAR BLANK OPENINGS	1	C-AJ-0055, C-AJ-0090
	2	F-A-0006, C-AJ-0055, C-AJ-0090		2	C-AJ-0055, C-AJ-0090
	3	F-A-0006, C-AJ-0055, C-AJ-0086,		3	C-AJ-0055, C-AJ-0086
SINGLE METAL PIPES OR CONDUIT	1	C-AJ-1226, F-A-1028, F-A-1017	SINGLE METAL PIPES OR CONDUIT	1	C-AJ-1226, W-J-1067, W-J-1020
	2	C-AJ-1226, F-A-1028, F-A-1017		2	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248
	3	C-AJ-1226, F-A-1017		3	C-AJ-1226, W-J-1041, W-J-1068
	4	C-BJ -1037, C-BJ-1034		4	C-BJ-1034, C-BJ-1037, W-J-1041, W-J-1042, W-J-1068
SINGLE NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167,	SINGLE NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT)	1	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342
	2	C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342		2	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342
	3	F-A-2054, C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342		3	C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342
	4	C-BJ 2016, C-AJ-2017		4	W-J-2057, W-J-2091
SINGLE/CABLE BUNDLES	1	F-A-3007,C-AJ-3095,C-AJ-3180, C-AJ-3283	SINGLE/CABLE BUNDLES	1	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167
	2	F-A-3007,C-AJ-3095,C-AJ-3334, F-A-3060		2	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189
	3	F-A-3007, C-AJ 3095, C-AJ-3285		3	C-AJ-3095, C-AJ-3180, W-J-3167
				4	W-J-3050
CABLE TRAY	1	C-AJ-4034, C-AJ-4035	CABLE TRAY	1	W-J-4027, C-AJ-4034, C-AJ-4035
	2	C-AJ-4034, C-AJ-4035		2	W-J-4027, C-AJ-4034, C-AJ-4035
	3	C-AJ-4034, C-AJ-4035		3	C-AJ-4034, C-AJ-4035
				4	W-J-8007
SINGLE INSULATED PIPES	1	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090, C-AJ-5048	SINGLE INSULATED PIPES	1	C-AJ-5090, C-AJ-5091, C-AJ 5061, W-J-5042
	2	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090		2	C-AJ-5090, C-AJ-5091, C-AJ-5061, W-J-5042
	3	F-A 5016, C-AJ-5090, F-A-5018		3	C-AJ-5090, C-AJ-5061
	4	C-BJ-5006		4	C-BJ-5006, W-J-5028
ELECTRICAL BUSWAY	1	C-AJ-6006, C-AJ-6017, F-A-6002, C-AJ-6036	ELECTRICAL BUSWAY	1	C-AJ-6006, C-AJ-6017, C-AJ-6036
	2	C-AJ-6006, C-AJ-6017, F-A 6042, C-AJ-6036		2	C-AJ-6006, C-AJ-6017, C-AJ-6036
	3	C-AJ-6006, C-AJ-6017		3	C-AJ-6006, C-AJ-6017
MECHANICAL DUCTWORK WITHOUT DAMPERS NON-INSULATED	1	C-AJ-7046, C-AJ-7051, C-AJ-7084	MECHANICAL DUCTWORK WITHOUT DAMPERS NON-INSULATED	1	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022
	2	C-AJ-7046, C-AJ-7051, C-AJ-7085		2	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022
	3	C-AJ-7046, C-AJ-7051		3	C-AJ-7046, C-AJ-7051
MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	N/A**	N/A**	MECHANICAL DUCTWORK WITHOUT DAMPERS INSULATED	1	W-J-7029, W-J-7124
				2	W-J-7091, W-J-7112, W-J-7124
MIXED PENETRANTS	1	C-AJ 8099, C-AJ-8056, C-AJ-8143	MIXED PENETRANTS	1	C-AJ 8099, C-AJ 8056, W-J 8007, C-AJ 8143
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143		2	C-AJ 8099, C-AJ 8056, W-J 8007, C-AJ 8143
	3	C-AJ-8099, C-AJ-8056		3	C-AJ 8041, C-AJ 8056, W-J 8007, C-AJ 8099
	4	C-AJ-8095		4	C-AJ 8095, W-J 8007

WOOD FLOORS			GYPSUM WALLS		
TYPE OF PENETRANT	F-RATING (HR)	BASIS OF DESIGN UL SYSTEM	TYPE OF PENETRANT	F-RATING (HR)	BASIS OF DESIGN UL SYSTEM
METAL PIPES OR CONDUIT	1	F-C-1009, F-C-1059, F-C-1168	METAL PIPES OR CONDUIT	1	W-L-1054, W-L-1058, W-L-1164, W-L-1506
	2	F-C-1009, F-C-1059, F-C-1168		2	W-L-1054, W-L-1058, W-L-1164, W-L-1506
				4	W-L-1110, W-L-1111, W-L-1165
NON-METALLIC PIPE OR CONDUIT	1	F-C-2232, F-C-2030, F-C-2160, F-C-2389	NON-METALLIC PIPE OR CONDUIT	1	W-L-2078, W-L-2075, W-L-2128
	2	F-C-2029, F-C-2030, F-C-2128, F-C-2160		2	W-L-2078, W-L-2075, W-L-2128
				4	W-L-2184, W-L-2245
SINGLE OR BUNDLED CABLES	1	F-C-3012, F-C-3110, F-C-3044	SINGLE OR BUNDLED CABLES	1	W-L-3085, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396
	2	F-C-3012, F-C-3110		2	W-L-3085, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396
				3	W-L-3385, W-L-3277
				4	W-L-3139, W-L-3334

INSULATED PIPES	1	F-C-5004, F-C-5037, F-C-5036	CABLE TRAY	1	W-L-4011, W-L-4019, W-L-4081
				2	W-L-4011, W-L-4019, W-L-4081
				4	W-L 8014
	2	F-C-5004, F-C-5037	INSULATED PIPES	1	W-L-5028, W-L-5029, W-L-5047
				2	W-L-5028, W-L-5029, W-L-5047
				4	W-L-5073
NON-INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	F-C-7013	NON-INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	W-L 7017, W-L-7040, W-L-7042, W-L-7155
				2	W-L-7040, W-L-7042, W-L-7155
INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	N/A**	INSULATED MECHANICAL DUCTWORK WITHOUT DAMPERS	1	W-L-7059, W-L-7153, W-L-7156, W-L-7151
	2	N/A**		2	W-L-7059, W-L-7153, W-L-7156, W-L-7151
MIXED PENETRANTS	1	F-C-8009, F-C-8014, F-C-826	MIXED PENETRANTS	1	W-L-1095, W-L-8013
				2	W-L-1095, W-L-8013
				4	W-L-8014

END OF SECTION 078413

SECTION 078443 - JOINT FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Joints in or between fire-resistance-rated constructions.
   2. Joints in smoke barriers.

B. Related Sections:
   1. Section 078413 "Penetration Firestopping" for penetrations in fire-resistance-rated walls, horizontal assemblies, and smoke barriers and for wall identification.
   2. Section 092216 "Non-Structural Metal Framing" for firestop tracks for metal-framed partition heads.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site in conjunction with Penetration Firestopping.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Schedule: For each joint firestopping system. Include location, illustration of firestopping system, and design designation of qualified testing agency.
   1. Engineering Judgments: Where Project conditions require modification to a qualified testing agency's illustration for a particular joint firestopping system condition, submit illustration, with modifications marked, approved by joint firestopping system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Installer Certificates: From Installer indicating fire-resistive joint systems have been installed in compliance with requirements and manufacturer's written recommendations.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for fire-resistive joint systems.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with UL's "Qualified Firestop Contractor Program Requirements."

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.

B. Install and cure fire-resistive joint systems per manufacturer's written instructions using natural means of ventilation or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed according to specified requirements.

B. Coordinate sizing of joints to accommodate fire-resistive joint systems.

C. Notify Owner's testing agency at least seven days in advance of fire-resistive joint system installations; confirm dates and times on day preceding each series of installations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics:
1. Perform joint firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
2. Test per testing standards referenced in "Joint Firestopping Systems" Article. Provide rated systems complying with the following requirements:
a. Joint firestopping systems shall bear classification marking of a qualified testing agency.
1) UL in its "Fire Resistance Directory."
2) Intertek Group in its "Directory of Listed Building Products."

2.2 JOINT FIRESTOPPING SYSTEMS

A. Joint Firestopping Systems: Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which joint firestopping systems are installed. Joint firestopping systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.

B. Joints in or between Fire-Resistance-Rated Construction: Provide joint firestopping systems with ratings determined per ASTM E 1966 or UL 2079.
1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the wall, floor, or roof in or between which it is installed.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. A/D Fire Protection Systems Inc.
   b. Grace Construction Products.
   c. Hilti, Inc.
   d. Johns Manville.
   e. Specified Technologies Inc.
   f. 3M Fire Protection Products.
   g. Tremco, Inc.; Tremco Fire Protection Systems Group.
   h. USG Corporation.

C. Joints in Smoke Barriers: Provide fire-resistive joint systems with ratings determined per UL 2079 based on testing at a positive pressure differential of 0.30-inch wg (74.7 Pa).
   1. L-Rating: Not exceeding 5.0 cfm/ft. (0.00775 cu. m/s x m) of joint at both ambient and elevated temperatures.

D. Exposed Joint Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

E. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials, that are needed to install elastomeric fill materials and to maintain ratings required. Use only components specified by joint firestopping system manufacturer and approved by the qualified testing agency for conditions indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:
   1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
   2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
   3. Remove laitance and form-release agents from concrete.

A. Prime substrates where recommended in writing by joint firestopping system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3 INSTALLATION

A. General: Install fire-resistive joint systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.

B. Install forming materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
   1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.

C. Install elastomeric fill materials for fire-resistive joint systems by proven techniques to produce the following results:
   1. Elastomeric fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
   2. Apply elastomeric fill materials so they contact and adhere to substrates formed by joints.
   3. For elastomeric fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

A. Joint Identification: Identify joint firestopping systems with legible metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of joint edge so labels are visible to anyone seeking to remove or joint firestopping system. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
   1. The words "Warning - Joint Firestopping - Do Not Disturb. Notify Building Management of Any Damage."
   2. Contractor's name, address, and phone number.
   3. Designation of applicable testing agency.
   4. Date of installation.
   5. Manufacturer's name.
   6. Installer's name.

3.5 FIELD QUALITY CONTROL

A. Inspecting Agency: Owner will engage a qualified testing agency to perform tests and inspections according to ASTM E 2393.

B. Where deficiencies are found or joint firestopping systems are damaged or removed due to testing, repair or replace joint firestopping systems so they comply with requirements.

C. Proceed with enclosing joint firestopping systems with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTING

A. Clean off excess elastomeric fill materials adjacent to joints as the Work progresses by methods and with cleaning materials that are approved in writing by joint firestopping system manufacturers and that do not damage materials in which joints occur.

B. Provide final protection and maintain conditions during and after installation that ensure joint firestopping systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.

3.7 FIRE-RESISTIVE JOINT SYSTEM SCHEDULE

A. Where UL-classified systems are indicated, they refer to system numbers in UL's "Fire Resistance Directory" under product Category XHBN.

Joint Type	F-Rating (Hr)	Hilti Basis of Design UL System	
		Joint Width Less than or Equal to 2"	Joint Width Greater than 2" Less than or Equal to 6" [4]
Concrete (Floor to Floor)	1	FF-D-1012, FF-D-1013*	FF-D-1012, FF-D-1013
	2	FF-D-1012, FF-D-1013*	FF-D-1012, FF-D-1013
	3	FF-D-1011, FF-D-1026*	FF-D-1011, FF-D-1026
	4	FF-D-1047	FF-D-1125
Concrete (Edge of Floor Slab to Wall)	1	FW-D-1011, FW-D-1012, FW-D-1013	FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021
	2	FW-D-1011, FW-D-1012, FW-D-1013	FW-D-1011, FW-D-1012, FW-D-1013, FW-D-1021
	3	FW-D-1011	FW-D-1011, FW-D-1021
	4	FW-D-1047	FW-D-1092
Concrete or Block Wall to Flat Concrete Floor (Top-of-Wall)	1	N/A**	N/A**
	2	HW-D-0097*	HW-D-1009
	3	HW-D-1008*, HW-D 0268	HW-D-1008
	4	HW-D-1042	HW-D-1103
Concrete or Block Wall to Concrete Over Fluted Metal Deck (Top-of-Wall)	1	HW-D-0098	N/A**
	2	HW-D-0080, HW-D-0081, HW-D-0098	HW-D-1037
	3	N/A**	N/A**
	4	HW-D-0294	N/A**
Gypsum Wall to Flat Concrete Floor (Top-of-Wall)	1	HW-D-0757, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
	2	HW-D-0757, HW-D-0082, HW-D-0083, HW-D-0106, HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
	3	HW-D-0119	HW-D-1011, HW-D-1012, HW-1020
Gypsum Shaft Wall to (Top-of-Wall)	2	HW-D-0342 (FLAT CONCRETE) HW-D-0541, HW-D-0542 (CONCRETE OVER METAL DECK)	N/A**
Gypsum Shaft Wall to Concrete Floor (Bottom-of-Wall)	1	BW-S-0023	N/A**
	2	BW-S-0023	N/A**
Gypsum Wall to Concrete Floor (Bottom-of-Wall)	1	BW-S-0001, BW-S-0002, BW-S-0039	N/A**
	2	BW-S-0001, BW-S-0002, BW-S-0039	N/A**
Gypsum Wall to Concrete Over Fluted Metal Deck (Top-of-Wall)	1	HW-D-0042*, HW-D-0049*, HW-D-0087*, HW-D-0089*, HW-D-0045, HW-D-0046*, HW-D-0076*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-0292, HW-D-0295, HW-D-538*	HWD-1011, HWD-1012, HW-1020
	2	HW-D-0042*, HW-D-0049*, HW-D-0087*, HW-D-0089*, HW-D-0045, HW-D-0046*, HW-D-0076*, HW-D-0077*, HW-D-0154, HW-D-0184*, HW-D-292, HW-D-0295, HW-D0538*	HW-D-1011, HW-D-1012, HW-D-1020
	3	HW-D-0292, HW-D-0295	HWD-1011, HWD-1012, HW-1020
	4	HW-D-0292, HW-D-0295	N/A**
Concrete (Wall to Wall)	2	WW-D-0017, WW-D-0082	WW-D-1080, WW-D-1084
	3	WW-D-1011*, WW-D-0032	WW-D-1011
	4	WW-D-1047	WW-D-1128
Gypsum to Concrete (Wall to Wall)	1	WW-D-0040	N/A**
	2	WW-D-0040	N/A**

B. Basis of Design: Hilti, Inc.
   1. Contact the manufacturer for current UL classified system or Engineer Judgement Drawings (tel. 800-879-8000)

C. NOTES:
   1. Classified systems for 2" - 6" wide joints may be used for joints 2” wide and less.
   2. Confirm that movement capabilities of the selected UL system meet or exceeds the specified movement range of the particular joint.
   3. Systems marked with asterisk (*) are suitable for top of wall joints where the fluted metal deck has spray-on Monokote MK-6/HY fireproofing.
   4. Verify allowable joint width on specific UL System Drawing.

END OF SECTION 078443

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Silicone joint sealants.
2. Urethane joint sealants.
3. Mildew-resistant joint sealants.
4. Preformed joint sealants.

B. Related Sections:
1. Section 033000 "Cast-in-Place Concrete" for control and expansion joint fillers.
2. Section 079219 "Acoustical Joint Sealants" for sealing joints in sound-rated construction.
3. Section 088000 “Glazing” for glazing sealants.
4. Section 092900 “Gypsum Board” for sealing perimeter joints.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

A. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

A. Preconstruction Laboratory Test Reports: From sealant manufacturer, indicating the following:
   1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
   2. Interpretation of test results and written recommendations for primers and substrate preparation are needed for adhesion.

B. Field-Adhesion-Test Reports: For each sealant application tested.

C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Company with minimum of three years experience specializing in work of this section, employing applicators trained for application of joint sealants required for this project, with record of successful completion of projects of similar scope, and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.
   1. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
   1. Adhesion: Use ASTM C 719 and ASTM C 794 to determine requirements for joint preparation, including cleaning and priming.
   2. Compatibility: Use ASTM C 1087 to determine materials forming joints and adjacent materials do not adversely affect sealant materials and do not affect sealant color.
   3. Stain Testing: Use ASTM C 510, ASTM C 1248, or ASTM D 2203 to verify non-staining characteristics of proposed sealants on specified substrates.
   4. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
   5. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
   6. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
   7. Testing will **NOT** be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted.

B. Preconstruction Field-Adhesion Testing: Prior to installing joint sealants, field test adhesion to joint substrates using ASTM C 1193 Method A.
   1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
   2. Conduct field tests for each kind of sealant and joint substrate.
   3. Notify Architect seven days in advance of dates and times when test joints will be erected.
   4. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

5. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.8 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

B. Coordination: Coordinate installation of joint sealants with cleaning of joint sealant substrates and other operations that may impact installation or finished joint sealant work.

1.9 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: **Two** years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: **Five** years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
   1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
   2. Disintegration of joint substrates from causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or other outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The performance requirements for the joint sealants is based upon the following:
   1. Products manufactured by Tremco, Inc., Commercial Sealants and Waterproofing Division, An RPM Company, Beachwood OH; (866) 321-6357; email: techresources@tremcoinc.com; www.tremcosealants.com.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:
   1. GE Advanced Materials – Silicones

2. Dow Corning Coporations
3. Pecora Corporation
4. Sika Corporation

2.2 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants and accessory materials that are compatible with one another, and with adjacent materials, as demonstrated by sealant manufacturer using ASTM C 1087 testing and related experience.

B. Joint Sealant Standard: Comply with ASTM C 920 and other specified requirements for each joint sealant.

C. Stain Test Characteristics: Where sealants are required to be nonstaining, provide sealants tested per ASTM C 1248 as non-staining on porous joint substrates specified.

2.3 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Non-Staining, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, Use NT; SWRI validated.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Tremco, Inc., Spectrem 1.
2. Volatile Organic Compound (VOC) Content: 1 g/L maximum.
3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
4. Staining, ASTM C 1248: None on concrete, marble, granite, limestone, and brick.
5. Color: As selected by Architect from manufacturer's standard line of not less than 12 colors.

B. Single-Component, Nonsag, Non-Staining, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, Use NT; SWRI validated.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Tremco, Inc., Spectrem 2.
2. Volatile Organic Compound (VOC) Content: 50 g/L maximum.
3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
4. Staining, ASTM C 1248: None on concrete, marble, granite, limestone, and brick.
5. Color: As selected by Architect from manufacturer's standard line of not less than 10 colors.

C. Mildew-Resistant, Single-Component, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, Use NT.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Tremco, Inc., Tremsil 200 Sanitary.
2. Volatile Organic Compound (VOC) Content: 1 g/L maximum.
3. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
4. Color: White and Clear.

2.4 URETHANE JOINT SEALANTS

A. Single-Component, Nonsag, Moisture-Cure, Polyurethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, Use NT; Greenguard certified.
   1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Tremco, Inc., Dymonic 100.
   2. Physical Characteristics:
      a. Volatile Organic Compound (VOC) Content: 40 g/L maximum.
      b. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
      c. Tensile Strength ASTM D412: 350 to 450 psi
      d. Percent Elongation ASTM D412: 800 to 900%
      e. Modulus at 100% ASTM D412: 75 to 85 psi
      f. Tear Strength ASTM D412: 65 to 75 psi
      g. Smoke Development ASTM E84: 5
      h. Color: As selected by Architect from manufacturer's standard line of not less than 20 colors.

B. Single-Component, Nonsag, Moisture-Cure, Polyurethane Hybrid Joint Sealant: ASTM C 920, Type S, Grade NS, Class 35, Use NT; Greenguard certified.
   1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Tremco, Inc., Dymonic FC.
   2. Physical Characteristics:
      a. Extrusion Rate ASTM C1183: 93.1 mL/min
      b. Weight Loss ASTM C1246: Pass
      c. Tack Free Time ASTM C679: 3 to 4 hr
      d. Volatile Organic Compound (VOC) Content: 10 g/L maximum.
      e. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
      f. Color: As selected by Architect from manufacturer's standard line of not less than 15 colors.

C. Single-Component, Nonsag, Polyurethane Joint Sealant: ASTM C920, Type S, Grade NS, Class 25, Use NT.
   1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Tremco, Inc., Vulkem 116.
   2. Physical Characteristics:
      a. Volatile Organic Compound (VOC) Content: 60 g/L maximum.
      b. Color: As selected by Architect from manufacturer's standard line of not less than 15 colors.

D. Immersible, Single-Component, Pourable, Traffic Grade Polyurethane Joint Sealant: ASTM C 920, Type S, Grade P, Class 50, Use T and I.
   1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Tremco, Inc., Vulkem 45 SSL.
   2. Physical Characteristics:
      a. Volatile Organic Compound (VOC) Content: 110 g/L maximum.
      b. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
      c. Color: As selected by Architect from manufacturer's standard line of not less than 5 colors.

E. Multi-Component, Non-sag, Polyurethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, Use I.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Tremco, Inc., Dymeric 240 FC.
2. Physical Characteristics:
a. Volatile Organic Compound (VOC) Content: 0 g/L maximum.
b. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
c. Color: As selected by Architect from manufacturer's standard line of not less than 70 colors.

2.5 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Tremco, Inc., Tremflex 834.
2. Physical Characteristics:
a. Volatile Organic Compound (VOC) Content: 35 g/L maximum.
b. Volatile Organic Emissions (VOE): Not greater than Greenguard Children & Schools Certification emissions levels.
c. Color: White, paintable.

2.6 SOLVENT-RELEASE-CURING JOINT SEALANTS

A. Butyl-Rubber-Based Joint Sealant: ASTM C 1311.
1. Basis-of-Design Product: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Tremco, Inc., Tremco Butyl Sealant.
2. Physical Characteristics:
a. Volatile Organic Compound (VOC) Content: 250 g/L maximum.
b. Color: As selected by Architect from manufacturer's standard colors.

2.7 JOINT SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.8 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
   1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
   2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
      a. Concrete.
      b. Masonry.
      c. Unglazed surfaces of ceramic tile.
      d. Exterior insulation and finish systems.
   3. Remove laitance and form-release agents from concrete.
   4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
      a. Metal.
      b. Glass.
      c. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant and Primer Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Joint Backing: Select joint backing materials recommended by sealant manufacturer as compatible with sealant and adjacent materials. Install backing material at depth required to produce profile of joint sealant allowing optimal sealant movement.
1. Joints up to 1/2 inch wide: 1:1 width to depth ratio.
2. Joints greater than 1/2 inch wide: 2:1 width to depth ratio; maximum 1/2 inch joint depth.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Masking: Mask adjacent surfaces to prevent staining or damage by contact with sealant or primer.

F. Joint Priming: Prime joint substrates when recommended by sealant manufacturer or when indicated by preconstruction testing or experience. Apply recommended primer using sealant manufacturer's recommended application techniques.

G. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

H. Liquid Sealant Application: Install sealants using methods recommended by sealant manufacturer, in depths recommended for application. Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction. Apply using adequate pressure to fill and seal joint width.
1. Tool sealants immediately with appropriately shaped tool to force sealants against joint backing and joint substrates, eliminating voids and ensuring full contact.
2. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
3. Tool exposed joint surface concave using tooling agents approved by sealant manufacturer for application.

I. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

3.4 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.

B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations.
   1. Comply with ASTM C 919, ASTM C 1193, and manufacturer's written recommendations for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.

C. Acoustical Ceiling Areas: Apply acoustical joint sealant at perimeter edge moldings of acoustical ceiling areas in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

3.5 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
   1. Extent of Testing: Test completed and cured sealant joints as follows:
      a. Perform tests for each kind of sealant and joint substrate.
   2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
      a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
   3. Inspect tested joints and report on the following:
      a. Whether sealants filled joint cavities and are free of voids.
      b. Whether sealant dimensions and configurations comply with specified requirements.
      c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
   4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
   5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory.
   1. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.6 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.7 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.8 EXTERIOR JOINT-SEALANT SCHEDULE

A. Exterior concealed transition joints in air barrier.
   1. Joint Sealant: Single-component neutral-curing low-modulus silicone sealant.
   2. Compatibility: Compatible with air barrier components specified in Division 13 pre-engineered building system section.

B. Exterior construction joints in cast-in-place concrete.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint Sealant: Single-component non-sag urethane sealant.
   4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.

C. Exterior movement joints in brick masonry.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint Sealant: Single-component non-sag urethane sealant.
   4. Joint-Sealant Color, Vertical Joints: As selected by Architect from manufacturer's standard colors.
   5. Joint-Sealant Color, Horizontal Joints: As selected by Architect from manufacturer's full range.

D. Exterior exposed joints in metal panel cladding systems.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.

E. Exterior concealed watertight joints in cladding systems
   1. Joint Sealant: Single-component neutral-curing silicone sealant.
   2. Joint Sealant: Single-component non-sag urethane sealant.

F. Exterior joints between different materials listed above.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint Sealant: Single-component non-sag urethane sealant.
   4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.

G. Exterior perimeter joints at frames of doors, windows, storefront frames, curtain wall frames, and louvers.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint Sealant: Single-component non-sag urethane sealant.
   4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.

H. All other exterior non-traffic joints.
   1. Joint Sealant: Single-component neutral-curing non-staining silicone sealant.
   2. Joint Sealant: Multi-component neutral-curing non-staining field tintable silicone sealant.
   3. Joint Sealant: Single-component non-sag urethane sealant.
   4. Joint-Sealant Color: As selected by Architect from manufacturer's standard colors.

I. Exterior horizontal traffic and traffic isolation joints: Refer to Division 32 Section "Concrete Paving Joint Sealants".

3.9 INTERIOR JOINT-SEALANT SCHEDULE

A. Interior perimeter joints of interior frames.
   1. Joint Sealant: Single-component non-sag urethane sealant.
   2. Joint Sealant: Siliconized acrylic latex.
   3. Joint-Sealant Color: Paintable.

B. Interior sanitary joints between plumbing fixtures, food preparation fixtures, and casework and adjacent walls, floors, and counters.
   1. Joint Sealant: Mildew-Resistant, Single-Component, nonsag, acid-curing silicone joint sealant.
   2. Joint-Sealant Color: As selected by Architect from manufacturer's full range; multiple colors required.

C. Interior traffic joints in floor and between floor and wall construction.
   1. Joint Sealant: Single-component pourable urethane sealant.
   2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

D. Interior non-moving joints between interior painted surfaces and adjacent materials.
   1. Joint Sealant: Siliconized acrylic latex.
   2. Joint-Sealant Color: Paintable.

E. Interior concealed sealants at thresholds and sills.
   1. Joint Sealant: Butyl-rubber-based joint sealant.

F. Interior exposed and non-exposed acoustical applications:
   1. Joint Sealant: Acoustical joint sealant

END OF SECTION 079200

SECTION 079219 – ACOUSTICAL JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes acoustical joint sealants.

B. Related Requirements:
   1. Section 079200 "Joint Sealants" for elastomeric, latex, and butyl-rubber-based joint sealants for nonacoustical applications.

1.3 ACTION SUBMITTALS

A. Product Data: For each acoustical joint sealant.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Acoustical-Joint-Sealant Schedule: Include the following information:
   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.
   3. Joint-sealant formulation.
   4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each kind of acoustical joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

B. Sample Warranties: For special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Warranty Documentation:
   1. Manufacturers' special warranties.
   2. Installer's special warranties.

1.6 WARRANTY

A. Installer's Special Warranty: Installer agrees to repair or replace acoustical joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: **One** year from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish acoustical joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

PART 2 - PRODUCTS

2.1 ACOUSTICAL JOINT SEALANTS

A. Acoustical joint-sealant products that effectively reduce airborne sound transmission through perimeter joints and openings in building construction, as demonstrated by testing representative assemblies in accordance with ASTM E90.

A. Acoustical Sealant for Exposed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex acoustical sealant complying with ASTM C834.
   1. Colors of Exposed Acoustical Joint Sealants: As selected by Owner’s Representative from manufacturer's full range of colors.

B. Acoustical Sealant for Concealed Joints: Manufacturer's standard nonsag, nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber acoustical sealant.

2.2 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by acoustical joint-sealant manufacturer where required for adhesion of sealant to joint substrates.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive acoustical joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing acoustical joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where recommended by acoustical-joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF ACOUSTICAL JOINT SEALANTS

A. Comply with acoustical joint-sealant manufacturer's written installation instructions unless more stringent requirements apply.

B. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical joint sealant. Install acoustical joint sealants at both faces of partitions, at perimeters, and through penetrations.
   1. Comply with ASTM C919, ASTM C1193, and manufacturer's written recommendations for closing off sound-flanking paths around or through assemblies, including sealing partitions to underside of floor slabs above acoustical ceilings.

C. Acoustical Ceiling Areas: Apply acoustical joint sealant at perimeter edge moldings of acoustical ceiling areas in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of acoustical joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect acoustical joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion.
   1. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated acoustical joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079219

MONTGOMERY COUNTY NY

Made of Something Stronger

DIVISION 8

Doors and Windows

SECTION 080671 – DOOR HARDWARE SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section references specification sections relating to commercial door hardware for the following:
   1. Swinging doors.
   2. Sliding Doors.
   3. Other doors to the extent indicated.

B. Commercial door hardware includes, but is not necessarily limited to, the following:
   1. Mechanical door hardware.
   2. Electromechanical and access control door hardware.
   3. Electromechanical and access control door hardware power supplies, back-ups and surge protection.
   4. Automatic operators.
   5. Cylinders specified for doors in other sections.

C. Related Sections:
   1. Division 08 Section “Door Hardware”.
   2. Division 28 Section “Access Control Hardware Devices”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
   1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
   2. ICC/IBC - International Building Code.
   3. NFPA 70 - National Electrical Code.
   4. NFPA 80 - Fire Doors and Windows.
   5. NFPA 101 - Life Safety Code.
   6. NFPA 105 - Installation of Smoke Door Assemblies.
   7. State Building Codes, Local Amendments.

E. Standards: Reference Related Sections for requirements regarding compliance with applicable industry standards.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
   1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:
   a. Type, style, function, size, label, hand, and finish of each door hardware item.
   b. Manufacturer of each item.
   c. Fastenings and other pertinent information.
   d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
   e. Explanation of abbreviations, symbols, and codes contained in schedule.
   f. Mounting locations for door hardware.
   g. Door and frame sizes and materials.
4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.

D. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

F. Warranties and Maintenance: Special warranties and maintenance agreements specified in the Related Sections.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.5 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

1.6 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Refer to “PART 3 – EXECUTION” for required specification sections.

PART 3 - EXECUTION

3.1 DOOR HARDWARE SETS

A. The door hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
   1. Quantities listed are for each pair of doors, or for each single door.
   2. The supplier is responsible for handing and sizing all products.
   3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
   4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Products listed in the hardware sets shall be supplied by and in accordance with the requirements described in the specification section as noted for each item.
   1. Section 08 71 00 – Door Hardware.
   2. Section 28 13 00 – Access Control.
   3. Section 28 15 00 – Access Control Hardware Devices.

C. Manufacturer’s Abbreviations:
   1. MK - McKinney
   2. PE - Pemko
   3. SA - SARGENT
   4. SU - Securitron
   5. HS - HES
   6. OT - Other

7. RO - Rockwood
8. RF - Rixson
9. NO - Norton
10. RU - Corbin Russwin

Hardware Sets

Set: 1.0

Doors: 102A

2	Continuous Hinge	FM__SLF-HD1	C	PE	087100	
1	Concealed Vert Rod Exit, Nightlatch	16 72 AD8410 106 x 863	US32D	SA	087100	
1	Concealed Vert Rod Exit, Dummy	16 72 AD8410 863	US32D	SA	087100	
2	Uncombinated Core	Compatible with Facility's Existing System	626		087100	
1	Electric Strike	by Security System Supplier	630	OT	281300	⚡
2	Conc Overhead Stop	1-X36	630	RF	087100	
2	Surface Closer	9500 / P9500	689	NO	087100	
1	Card Reader	by Security System Supplier		OT	281300	
1	Power Supply	AQL Series (Amps & Relays as Required)		SU	087100	⚡

Notes: Door closed & locked at all times. Presenting valid credential outside allows for authorized entrance. Free egress at all times. With loss of power door remains locked.

Set: 2.0

Doors: 116B, 118A, 150B

1	Continuous Hinge	FM__HD1	C	PE	087100	
1	Rim Exit Device, Storeroom	16 72 8804 ETMD	US32D	SA	087100	
2	Uncombinated Core	Compatible with Facility's Existing System	626		087100	
1	Electric Strike	by Security System Supplier	630	OT	281300	⚡
1	Conc Overhead Stop	1-X36	630	RF	087100	
1	Automatic Opener	6351	689	NO	087100	⚡
1	Card Reader	by Security System Supplier		OT	281300	
2	Wall Switch	700		NO	087100	⚡
1	Power Supply	by Security System Supplier		OT	281300	⚡

Notes: Door closed & locked at all times. Presenting valid credential outside allows for authorized entrance. Free egress at all times. With loss of power door remains locked.

Set: 3.0

Doors: 101A

2	Continuous Hinge	FM__SLF-HD1	C	PE	087100
1	Concealed Vert Rod Exit, Nightlatch	16 72 AD8410 106 x 863	US32D	SA	087100
1	Concealed Vert Rod Exit, Dummy	16 72 AD8410 863	US32D	SA	087100
3	Uncombinated Core	Compatible with Facility's Existing System	626		087100
2	Conc Overhead Stop	1-X36	630	RF	087100
2	Surface Closer	9500 / P9500	689	NO	087100
1	Threshold	to architect detail		PE	087100

Notes:

Set: 4.0

Doors: 161A

2	Hinge, Full Mortise	TA2714	US26D	MK	087100	
1	Hinge, Full Mortise	TA2714 QC	US26D	MK	087100	⚡
1	Access Control Exit Device	72 SN200 8876 BKIPS ETJ	US32D	SA	087100	⚡
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100	
1	Door Closer	7500 / P7500	689	NO	087100	
1	Door Stop	RM850 / RM860	US26D	RO	087100	
3	Silencer	608		RO	087100	
1	ElectroLynx Harness - Frame	QC-C1500P		MK	087100	⚡
1	ElectroLynx Harness - Door	QC-CXXX (Size as Required)		MK	087100	⚡
1	Wiring Diagram	WD-SYSPK		SA	087100	
1	Position Switch	DPS-M-BK		SU	087100	⚡
1	Power Supply	AQL Series (Amps & Relays as Required)		SU	087100	⚡

Notes: Door closed & locked at all times. Presenting valid credential outside shunts door position switches & allows for authorized entrance. Operating inside trim activates request to exit switch shunting door contact and allowing authorized egress at all times. With loss of power door remains locked.

Set: 5.0

Doors: 113A, 123A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100	
1	Magnetic Lock	M62FBD		SU	087100	⚡

1	Rim Exit Device, Passage	16 72 8815 ETMD	US32D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100
1	Motion Sensor	XMS		SU	087100
1	Push Button	EEB2		SU	087100
1	Card Reader	by Security System Supplier		OT	281300
1	Power Supply	AQL Series (Amps & Relays as Required)		SU	087100
1	Bracket	ZA-32/62CL		SU	087100

Set: 6.0

Doors: 133C

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Rim Exit Device, Classroom	16 72 8813 ETMD	US32D	SA	087100
2	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 7.0

Doors: 200A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Storeroom/Closet Lock	72 8204 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Conc Overhead Stop	1-X36	630	RF	087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
1	Gasketing	S773BL		PE	087100

Set: 8.0

Doors: 133A, 133B

2	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Hinge, Full Mortise	TA2714 QC	US26D	MK	087100
1	Access Control Lock	72 SN200 82271 BKIPS LNJ	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100

1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
1	Acoustic Seal Set	PEMKOSTCSET-1A	BL	PE	087100
1	ElectroLynx Harness - Frame	QC-C1500P		MK	087100
1	ElectroLynx Harness - Door	QC-CXXX (Size as Required)		MK	087100
1	Wiring Diagram	WD-SYSPK		SA	087100
1	Power Supply	AQL Series (Amps & Relays as Required)		SU	087100

Notes: Door closed & locked at all times. Presenting valid credential outside shunts integrated door position switches & allows for authorized entrance. Operating inside trim activates request to exit switch in lock shunting integrated door position switch and allowing authorized egress at all times. With loss of power or activation of building fire system door remains locked.

Set: 9.0

Doors: 130A

2	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Hinge, Full Mortise	TA2714 QC	US26D	MK	087100
1	Access Control Lock	72 SN200 82271 BKIPS LNJ	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Conc Overhead Stop	1-X36	630	RF	087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Acoustic Seal Set	PEMKOSTCSET-1A	BL	PE	087100
1	ElectroLynx Harness - Frame	QC-C1500P		MK	087100
1	ElectroLynx Harness - Door	QC-CXXX (Size as Required)		MK	087100
1	Wiring Diagram	WD-SYSPK		SA	087100
1	Power Supply	AQL Series (Amps & Relays as Required)		SU	087100

Notes: Door closed & locked at all times. Presenting valid credential outside shunts integrated door position switches & allows for authorized entrance. Operating inside trim activates request to exit switch in lock shunting integrated door position switch and allowing authorized egress at all times. With loss of power or activation of building fire system door remains locked.

Set: 10.0

Doors: 108A, 119A, 121A, 146A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Classroom Deadlock	72 4877	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing	626		087100

		System			
1	Push Pull	BF 111x73C/73CL	US32D	RO	087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 11.0

Doors: 120A, 120B, 136A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Storeroom/Closet Lock	72 8204 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 12.0

Doors: 104A, 158A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Storeroom/Closet Lock	72 8204 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Concealed Overhead Stop	2-X36	630	RF	087100
3	Silencer	608		RO	087100

Set: 13.0

Doors: 118B, 124A, 139A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Storeroom/Closet Lock	72 76 8204 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 14.0

Doors: 103A, 112A, 114A, 115A, 126A, 135A, 141A, 142A, 145A, 151A, 159A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Office/Entry Lock	72 8205 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100

1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 14.1

Doors: 127A, 128A, 154A, 157A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Office/Entry Lock	72 8205 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
1	Acoustic Seal Set	PEMKOSTCSET-1A	BL	PE	087100

Set: 15.0

Doors: 105A, 125A, 131A, 137A, 143A, 156A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Classroom Lock	72 8237 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 16.0

Doors: 110A, 160A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Classroom Lock	72 8237 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Concealed Overhead Stop	2-X36	630	RF	087100
3	Silencer	608		RO	087100

Set: 17.0

Doors: 110B, 117A, 117B, 130B, 143B

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Classroom Lock	72 8237 LE1J	US26D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 18.0

Doors: 118D

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Rim Exit Device, Passage	16 72 8815 ETMD	US32D	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 19.0

Doors: 109A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Privacy Lock	V21 8265 VN1J	US26D	SA	087100
1	Concealed Overhead Stop	2-X36	630	RF	087100
3	Silencer	608		RO	087100
1	Coat Hook	RM802	US26D	RO	087100

Set: 20.0

Doors: 106A

2	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Hinge, Full Mortise	TA2714 QC	US26D	MK	087100
1	Privacy Lock	V21 8265 VN1J	US26D	SA	087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Notes:

Set: 21.0

Doors: 155A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Passage Latch	8215 LE1J	US26D	SA	087100
3	Silencer	608		RO	087100

Notes: Existing closer to remain.

Set: 22.0

Doors: 116A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Door Pull	108	US32D	RO	087100
1	Push Plate	70C (4 x 16)	US32D	RO	087100
1	Door Closer	7500 / P7500	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100

Set: 23.0

Doors: 148A, 150A

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Door Pull	108	US32D	RO	087100
1	Push Plate	70C (4 x 16)	US32D	RO	087100
1	Automatic Opener	6311	689	NO	087100
1	Door Stop	RM850 / RM860	US26D	RO	087100
3	Silencer	608		RO	087100
2	Wall Switch	700		NO	087100

Set: 24.0

Doors: 122A

1	Mortise Cylinder	As Required x Construction Core	626	SA	087100
1	Uncombinated Core	Compatible with Facility's Existing System	626		087100

Notes: Balance of hardware by assembly supplier.

Set: 25.0

Doors: 107A, 111A, 118C, 140A

3	HInge Filler Plate	As Required to Fit Cutout in Existing Frame		RO	087100
1	Strike Filler Plate	As Required to Fit Cutout in Existing Frame		RO	087100

END OF SECTION 080671

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Standard and custom hollow metal doors and frames.
2. Steel sidelight, borrowed lite and transom frames.
3. Light frames and glazing installed in hollow metal doors.

B. Related Sections:
1. Division 08 Section "Door Hardware".
2. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
3. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.
4. Division 26 "Electrical" Sections for electrical connections including conduit and wiring for door controls and operators installed on frames with factory installed electrical knock out boxes.
5. Division 28 Section "Integrated Access Control Hardware Devices" for access control devices installed at door openings and provided as part of a security access control system.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
1. ANSI/SDI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
2. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
3. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
4. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
5. ANSI/SDI A250.11 - Recommended Erection Instructions for Steel Frames.
6. ASTM A1008 - Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
7. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
8. ASTM A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
9. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
10. ANSI/BHMA A156.115 - Hardware Preparation in Steel Doors and Frames.
11. ANSI/SDI 122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
12. ANSI/NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association.
13. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
14. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
15. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
16. UL 1784 - Standard for Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.

B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

C. Shop Drawings: Include the following:
1. Elevations of each door design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of anchorages, joints, field splices, and connections.
6. Details of accessories.
7. Details of moldings, removable stops, and glazing.
8. Details of conduit and preparations for power, signal, and control systems.

D. Samples for Verification:
1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40” above sill) or UL 10C.
1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
3. Smoke Control Door Assemblies: Comply with NFPA 105.
a. Smoke "S" Label: Doors to bear “S” label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.

D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.

E. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.
   1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.7 COORDINATION

A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:
   1. CECO Door Products (C).
   2. Curries Company (CU).
   3. Pioneer Industries (PI).

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

2.3 HOLLOW METAL DOORS

A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.

B. Exterior Doors (Energy Efficient): Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A924 A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model, ANSI/SDI A250.4 for physical performance level, and HMMA 867 for door construction.
   1. Design: Flush panel.
   2. Core Construction: Foamed in place polyurethane and steel stiffened laminated core with no stiffener face welds, in compliance with HMMA 867 “Laminated Core”.
      a. Provide 22 gauge steel stiffeners at 6 inches on-center internally welded at 5" on- center to integral core assembly, foamed in place polyurethane core chemically bonded to all interior surfaces. No stiffener face welding is permitted.
      b. Thermal properties to rate at a fully operable minimum U-Factor 0.37 and R-Value 2.7, including insulated door, thermal-break frame and threshold.
      c. Kerf Type Frames: Thermal properties to rate at a fully operable minimum U-Factor 0.38 and R-Value 2.6, including insulated door, kerf type frame, and threshold.
   3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053 inch - 1.3-mm) thick steel, Model 2.
   4. Vertical Edges: Vertical edges to be mechanically interlocked with hairline seam. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
   5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
   6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".
   7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

C. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
   1. Design: Flush panel.
   2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
      a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
   3. Level/Model: Level 2 and Physical Performance Level B (Heavy Duty), Minimum 18 gauge (0.042-inch - 1.0-mm) thick steel, Model 2.
   4. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
   5. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
   6. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

D. Manufacturers Basis of Design:
   1. Curries Company (CU) - Polystyrene Core - 707 Series.

2. Curries Company (CU) - Energy Efficient - 777 Trio-E Series.

2.4 SPECIAL FUNCTION HOLLOW METAL DOORS

A. Embossed Wood Grain Doors: Subject to the same compliance standards and requirements as standard hollow metal doors, provide wood pattern engraved and stainable full flush or 6-panel embossed face sheets fabricated from minimum A40 galvannealed steel with vertical edges having a similar engraved wood grain stainable surface. Door faces and edges to be factory stained and protected with a ultra-violet (UV) resistant clear coating.
   1. Provide doors with a minimum .005" wood grain embossing. The wood grain pattern is to match the grain pattern design of a typical wood stile and rail door.
   2. Vision lites to match engraved wood grain design and stain of the door.
   3. Manufacturers Basis of Design:
      a. Curries Company (CU) - CurriStain Series.

2.5 HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
   1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
   2. Manufacturers Basis of Design:
      a. Curries Company (CU) – Kerfed Weatherstripped WM Series.

C. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.
   1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
   2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
   3. Manufacturers Basis of Design:
      a. Curries Company (CU) - C Series.
      b. Curries Company (CU) - M Series.

D. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.

E. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

2.6 FRAME ANCHORS

A. Jamb Anchors:
   1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
   2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
   3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.

C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.7 LOUVERS

A. Metal Louvers: Unless otherwise indicated provide louvers to meet the following requirements.
   1. Blade Type: Vision proof inverted V or inverted Y.
   2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

B. Louvers for Fire Rated Doors: Metal louvers with fusible link and closing device, listed and labeled for use in doors with fire protection rating of 1-1/2 hours and less.
   1. Manufacturers: Subject to compliance with requirements, provide louvers to meet rating indicated.
   2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

2.8 LIGHT OPENINGS AND GLAZING

A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator’s shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.

B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.

C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.

D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

2.9 ACCESSORIES

A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

2.10 FABRICATION

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

C. Hollow Metal Doors:
   1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
   2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
   3. Louvers: Factory cut openings in door and install louvers into prepared openings where indicated.

4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".

D. Hollow Metal Frames:
1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
   a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
3. Equal Rabbet Frames: Provide frames with equal rabbet dimensions unless glazing and removable stops require wider dimensions on glass side of frame.
4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.
7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
8. Electrical Knock Out Boxes: Factory weld 18 gauge electrical knock out boxes to frame for electrical hardware preps; including but not limited to, electric through wire transfer hardware, electrical raceways and wiring harnesses, door position switches, electric strikes, magnetic locks, and jamb mounted card readers as specified in hardware sets in Division 08 Sections "Door Hardware" and "Access Control Hardware".
   a. Provide electrical knock out boxes with a dual 1/2-inch and 3/4-inch knockouts.
   b. Conduit to be coordinated and installed in the field (Division 26) from middle hinge box and strike box to door position box.
   c. Electrical knock out boxes to comply with NFPA requirements and fit electrical door hardware as specified in hardware sets in Division 08 Section "Door Hardware".
   d. Electrical knock out boxes for continuous hinges should be located in the center of the vertical dimension on the hinge jamb.
9. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
10. Jamb Anchors: Provide number and spacing of anchors as follows:
    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
       1) Two anchors per jamb up to 60 inches high.
       2) Three anchors per jamb from 60 to 90 inches high.
       3) Four anchors per jamb from 90 to 120 inches high.
       4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
    b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
       1) Three anchors per jamb up to 60 inches high.
       2) Four anchors per jamb from 60 to 90 inches high.
       3) Five anchors per jamb from 90 to 96 inches high.
       4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
       5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
11. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".

12. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.

E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.11 STEEL FINISHES

A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."

D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
   1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
   2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
   3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
   4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
   1. Non-Fire-Rated Standard Steel Doors:
      a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
      b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
      c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
      d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
   2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

END OF SECTION 081113

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes access doors and frames for walls and ceilings.
   1. Related hardware and attachments.

B. Related Requirements:
   1. Section 092216 “Non-Structural Metal Framing” for framed openings in metal framing.
   2. Section 099123 “Interior Painting” for field painting factory primed access doors
   3. Section 233300 "Air Duct Accessories" for heating and air-conditioning duct access doors.
   4. Section 224000 “Plumbing Fixtures” for access doors provided with indoor drinking fountains.

1.3 ACTION SUBMITTALS

A. Product Data: Manufacturer’s technical data for each type of access door and panel assembly, including setting drawings, templates, fire-resistive characteristics, finish requirements, and details of anchorage devices.
   1. Include complete schedule, types, locations, construction details, finishes, latching or locking provisions, and other pertinent data.

B. Shop Drawings:
   1. Door and panel units: Show types, elevations, thickness of metals, full size profiles of door members.
   2. Hardware: Show materials, finishes, locations of fasteners, types of fasteners, locations and types of operating hardware, and details of installation.
   3. General: Show connections of units and hardware to other Work. Include schedules showing location of each type and size of door and panel units.

C. Manufacturer's Installation Instructions: Indicate installation requirements and rough-in dimensions.

1.4 CLOSEOUT SUBMITTALS

A. Record Documents: List of applicable room name and number in which access door is located.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain access doors through one source from a single manufacturer wherever possible.

1.6 COORDINATION

A. Provide inserts and anchoring devices that will be built into other Work for installation of access door assemblies.

B. Coordinate delivery with other Work to avoid delay.

1.7 DELIVERY, STORAGE AND HANDLING

A. Package and shipper manufacturer’s recommendations.

B. Store per manufacturer’s instructions.
1. Store in dry area out of direct sunlight.

1.8 WARRANTY

A. Provide manufacturer's written warranty.

B. Warrant materials and fabrication against defects after completion and final acceptance of Work.
1. Repair defects, or replace with new materials, faulty materials or fabrication developed during the warranty period at no expense to Owner.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Access Doors and Frames: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, according to NFPA 252 or UL 10B.

2.2 ACCESS DOORS AND FRAMES

A. Flush Access Doors with Concealed Flanges:
1. Description: Face of door flush with frame; with concealed flange for gypsum board installation and concealed hinge.
2. Optional Features:
a. Gasketing
b. Piano hinges.
3. Door:
a. Metallic-Coated Steel Sheet for Door: Nominal 0.064 inch, 16 gage factory primed.
b. Stainless Steel Sheet for Door in wet areas/toilet rooms: Nominal 0.062 inch, 16 gage, ASTM A480/A480M No. 4 finish.
4. Frame Material: Same material and thickness as door.
5. Latch and Lock: Cam latch, hex-head wrench operated.

2.3 MATERIALS

A. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

B. Steel Sheet: Uncoated or electrolytic zinc coated, ASTM A879/A879M, with cold-rolled steel sheet substrate complying with ASTM A1008/A1008M, Commercial Steel (CS), exposed.

C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.

D. Stainless Steel Plate, Sheet, and Strip: ASTM A240/A240M or ASTM A666, Type 304.
   1. Remove tool and die marks and stretch lines, or blend into finish.

E. Frame Anchors: Same material as door face.

F. Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A153/A153M or ASTM F2329.

2.4 FABRICATION

A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.

B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Furnish mounting holes, attachment devices and fasteners of type required to secure access doors to types of supports indicated.
   1. For concealed flanges with drywall bead, provide edge trim for gypsum panels securely attached to perimeter of frames.

D. Furnish number of latches required to hold door in flush, smooth plane when closed.

2.5 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Painted Finishes: Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
   1. Factory Primed: Apply manufacturer's standard, lead- and chromate-free, universal primer immediately after surface preparation and pretreatment.

E. Stainless Steel Finishes:
   1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
   2. Polished Finish: ASTM A480/A480M No. 4 finish. Grind and polish surfaces to produce uniform finish, free of cross scratches.
      a. Run grain of directional finishes with long dimension of each piece.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Obtain specific locations and sizes for required access doors and frames from trades, including mechanical and electrical, requiring access to concealed equipment and indicate on submittal schedule.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing access doors and frames.

B. Install frames plumb and level in opening. Secure rigidly in place.

C. Position units to provide convenient access to concealed Work requiring access.

3.3 ADJUSTING AND CLEANING

A. Adjust doors and hardware, after installation, for proper operation.

B. Remove and replace panels or frames that are warped, bowed, or damaged.

END OF SECTION 083113

SECTION 083513 - FOLDING DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Metal folding doors.

B. Related Sections:
   1. Division 08 Section "Door Hardware".

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for folding doors.

B. Shop Drawings:
   1. Include plans, elevations, sections, and installation details.
   2. Include clearances required for operation, operating and control mechanisms, access requirements, and accessory items.

C. Samples: For each exposed product and for each color and texture specified.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For folding doors to include in operation and maintenance manuals.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver folding door assemblies wrapped and crated to provide protection during transit and Project-site storage.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install folding doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at levels intended for building occupants after completion of construction during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 FOLDING DOORS

A. Description: Horizontal-sliding, manually operated accordion folding doors, with X-type accordion folding frames.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide D-Series Folding Door Gate as manufactured by Cisco-Eagle or comparable product.

B. Hardware: Manufacturer's standard heavy-duty, manually operated metal pulls and latches as follows:
   1. Finish: Manufacturer's standard.
   2. Latch: Operable from both sides of closed door.
   3. Lock: Manufacturer's standard deadlock to receive cylinder, operable from one side of door.
      a. Coordinate keying with Section 087100 Door Hardware for cylinder requirements.

C. Jamb Molding: Manufacturer's molding at closing jamb as required for light-tight jamb closure.
   1. Jamb Strip: Nonferrous for end-opening doors to ensure tight closure by engaging rubber bumper on lead post.

D. Posts: Manufacturer's standard steel or extruded-aluminum posts formed for rigidity and to provide light seal at supporting construction.
   1. Fixed Jamb Post: To anchor door to stack jamb.
   2. Lead Post: At closing edge of door.

E. Tiebacks: To maintain door in stacked position.

F. Stacking Configuration: As indicated on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. For folding doors supported by or anchored to permanent construction, advise installers of specific requirements for placement of anchorage devices.
   1. Furnish installers of other work with templates and drawings indicating locations of anchorage devices and similar items.

3.3 INSTALLATION

A. General: Install folding doors complying with manufacturer's written installation instructions.

B. Standard Floor Clearances: 2-inch maximum (above floor finish).

3.4 ADJUSTING

A. Adjust units to ensure smooth, quiet operation without warping or binding. Adjust hardware to function smoothly. Confirm that latches engage accurately and securely without forcing or binding.

END OF SECTION 083513

SECTION 084113 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Exterior and interior manual-swing entrance doors and door-frame units.

B. Related Sections:
   1. Section 079200 “Joint Sealants” for sealants around perimeter joints around frames of doors.
   2. Section 087100 “Door Hardware” for commercial door hardware.
   3. Section 088000 “Glazing” for glazed lights in aluminum framed entrances and storefronts.
   4. Section 281500 “Integrated Access Control Hardware Devices” for access control hardware devices.

1.3 DEFINITIONS

A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
   1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
   2. Include full-size isometric details of each vertical-to-horizontal intersection of aluminum-framed entrances and storefronts, showing the following:
      a. Joinery, including concealed welds.
      b. Anchorage.
      c. Expansion provisions.
      d. Glazing.
      e. Flashing and drainage.
   3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.

F. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware. Delegated-Design Submittal: For aluminum-framed systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Detail fabrication and assembly of aluminum-framed systems.
2. Include design calculations.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Energy Performance Certificates: For aluminum-framed entrances and storefronts, accessories, and components, from manufacturer.
1. Basis for Certification: NFRC-certified energy performance values for each aluminum-framed entrance and storefront.

C. Product Test Reports: For aluminum-framed entrances and storefronts, for tests performed by manufacturer and witnessed by a qualified testing agency.
1. Provide test reports from AAMA accredited laboratories certifying the performance.
2. Test reports shall be accompanied by the storefront manufacturer’s letter of certification stating that the tested storefront meets or exceeds the referenced criteria for the appropriate storefront type.

D. Field quality-control reports.

E. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For aluminum-framed entrances and storefronts to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.

C. Product Options: Information on Drawings Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

D. Accessible Entrances: Comply with applicable provisions in ICC/ANSI A117.1.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including, but not limited to, excessive deflection.
      b. Noise or vibration caused by thermal movements.
      c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
      d. Adhesive or cohesive sealant failures.
      e. Water leakage through fixed glazing and framing areas.
      f. Failure of operating components.
   2. Warranty Period: **Three** years from date of Substantial Completion.

B. Special Glass Warranty:
   1. Provide written warranty for insulated glass units that they will be free from obstruction of vision as a result of dust or film formation on the internal glass surfaces caused by failure of the hermetic seal due to defects in material and workmanship.
   2. Warranty Period: **Ten** years from date of Substantial Completion.

C. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.
   1. Warranty Period: **Three** years from date of Substantial Completion.

1.10 MAINTENANCE SERVICE

A. Entrance Door Hardware:
   1. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:
   1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
   2. Dimensional tolerances of building frame and other adjacent construction.
   3. Failure includes the following:
      a. Deflection exceeding specified limits.
      b. Thermal stresses transferring to building structure.

c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
d. Glazing-to-glazing contact.
e. Noise or vibration created by wind and by thermal and structural movements.
f. Loosening or weakening of fasteners, attachments, and other components.
g. Sealant failure.
h. Failure of operating units.

B. Structural Loads:
1. Wind Loads: As indicated on Drawings.
a. Basic Wind Speed: 109 mph.
b. Risk Category: II
c. Exposure Category: B.

C. Deflection of Framing Members:
1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane shall not exceed L/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or 1/8 inch, whichever is smaller.

D. Structural-Test Performance: Provide aluminum-framed systems tested according to ASTM E 330 as follows:
1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members.
3. Test Durations: As required by design wind velocity, but not fewer than 10 seconds.

E. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft.

F. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 15.0 psf.

G. Thermal Movements: Provide aluminum-framed systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
2. Interior Ambient-Air Temperature: 75 deg.

H. Condensation Resistance: Provide aluminum-framed systems with fixed glazing and framing areas having condensation-resistance factor (CRF) of not less than 40 when tested according to AAMA 1503.

I. Thermal Conductance: Provide aluminum-framed systems with fixed glazing and framing areas having an average U-factor of not more than 0.66 Btu/sq. ft. x h x deg F tested according to AAMA 1503.

2.2 MANUFACTURER

A. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.

2.3 ALUMINUM STOREFRONT SYSTEM

A. Basis-of-Design Product: Subject to compliance with requirements, provide System 403-I Thermal Flush-Glazed Screw Spline storefront system and Series D502 Wide Stile ThermaStile entrances as manufactured by EFCO Corporation, or comparable product by one of the following:
   1. Kawneer North America; an Alcoa company.
   2. Tubelite.
   3. United States Aluminum.
   4. Vistawall Architectural Products; The Vistawall Group; a Bluescope Steel company.
   5. YKK AP America Inc.

2.4 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
   1. Sheet and Plate: ASTM B 209.
   2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
   3. Extruded Structural Pipe and Tubes: ASTM B 429.
   4. Structural Profiles: ASTM B 308/B 308M.

B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer, complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
   1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
   2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
   3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

C. Dissimilar Metals: All dissimilar metals must be properly insulated to prevent galvanic action.

2.5 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
   1. Construction: Thermally broken.
      a. The thermal barrier shall be thermal struts, consisting of glass reinforced polyamide nylon, mechanically crimped in raceways extruded in the exterior and interior extrusions.
      b. Poured and debridged urethane thermal barriers shall not be permitted.
   2. Glazing System: Retained mechanically with gaskets on four sides.
   3. Glazing Plane: Center.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
   1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
   2. Reinforce members as required to receive fastener threads.
   3. Use exposed fasteners with countersunk Phillips screw heads, fabricated from stainless steel.

D. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts, complying with ASTM A 123/A 123M or ASTM A 153/A 153M.

E. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.

F. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

2.6 GLAZING SYSTEMS

A. Glazing: As specified in Section 088000 "Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

2.7 ENTRANCE DOOR SYSTEMS

A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.
1. Door Construction: 2-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
a. Thermal Construction: High-performance thermal struts, consisting of glass reinforced polyamide nylon, mechanically crimped in raceways extruded in the exterior and interior extrusions to separate aluminum members exposed to the exterior from members exposed to the interior. Poured and debridged urethane thermal barriers shall not be permitted.
1) Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers.
2) Thermal barriers shall align at corners.
b. Door stiles and rails shall have hairline joints at corners.
c. Exterior corner construction is true mortise and tenon for physical interlock between rails and stiles.
d. Interior corner construction shall be joined by heavy concealed reinforcement brackets with screws and shall be of deep penetration and fillet welded.
e. Weather stripping shall be wool pile and shall be installed in one stile of pairs of doors and in jamb stiles of center pivot doors.
2. Door Design: Wide stile; 5-inch nominal width.
a. Accessible Doors: Smooth surfaced for width of door in area within 10 inches above floor or ground plane.
3. Glazing Stops and Gaskets: Square, snap-on, extruded-aluminum stops and preformed gaskets.
a. Provide nonremovable glazing stops on outside of door. Glazing stop sections shall have 0.050” wall thickness.

2.8 ENTRANCE DOOR HARDWARE

A. General: Provide entrance door hardware and for each entrance door, to comply with requirements in this Section.
1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products complying with BHMA standard referenced.
2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
3. Opening-Force Requirements:

a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.

B. Designations: Requirements for design, grade, function, finish, quantity, size, and other distinctive qualities of each type of entrance door hardware are indicated in "Entrance Door Hardware Sets" Article. Products are identified by using entrance door hardware designations as follows:
1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in "Entrance Door Hardware Sets" Article.
2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.

C. Entrance Door Hardware Sets: As specified in Section 080671 “Door Hardware Schedule”.

2.9 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Section 079200 "Joint Sealants."
1. Sealants used inside the weatherproofing system shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.

C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

D. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30-mil thickness per coat.

2.10 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing from interior.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
8. All exposed work shall be carefully matched to produce continuity of line and design with all joints.
9. System design shall be such that raw edges will not be visible at joints.

C. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

D. Storefront Framing: Fabricate components for assembly using screw-spline system.

E. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
1. Shear block construction shall be utilized throughout.
2. At exterior doors, provide compression weather stripping at fixed stops. Provide a bulb weather-strip that complies with ASTM E 2203.
3. At interior doors, provide silencers at stops to prevent metal-to-metal contact. Install three silencers on strike jamb of single-door frames and two silencers on head of frames for pairs of doors.

F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
2. At exterior doors, provide weather sweeps applied to door bottoms.
3. All units shall be dry glazed with extruded pressure fitting aluminum glazing stops, and a gasket that complies with ASTM E 2203.

G. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

H. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.11 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611 or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. Verify that openings are plumb, level, clean, provide a solid anchoring surface and are in accordance with approved shop drawings.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General:
1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless otherwise indicated.

B. Metal Protection:
   1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
   2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

D. Set continuous sill members and flashing in full sealant bed as specified in Section 079200 "Joint Sealants" to produce weathertight installation.

E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

F. Install glazing as specified in Section 088000 "Glazing."
   1. Structural-Sealant Glazing:
      a. Prepare surfaces that will contact structural sealant according to sealant manufacturer's written instructions to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.
      b. Install weatherseal sealant according to Section 079200 "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

G. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.
   1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
   2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

H. Install perimeter joint sealants as specified in Section 079200 "Joint Sealants" to produce weathertight installation.
   1. Sealing materials shall be used in strict accordance with the manufacturer’s printed instructions, and shall be applied only by mechanics specially trained or experienced in their use. All surfaces must be clean and free of foreign matter before applying sealing materials. Sealing compounds shall be tooled to fill the joint and provide a smooth finished surface.

3.3 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:
   1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
   2. Alignment:
      a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
      b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

3.4 FIELD QUALITY CONTROL

A. Testing Services: Testing and inspecting of representative areas to determine compliance of installed systems with specified requirements shall take place as follows and in successive phases as indicated on

Drawings. Do not proceed with installation of the next area until test results for previously completed areas show compliance with requirements.

1. Air Infiltration: Areas shall be tested for air leakage of 1.5 times the rate specified for laboratory testing under "Performance Requirements" Article, but not more than 0.09 cfm/sq. ft., of fixed wall area when tested according to ASTM E 783 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft.
2. Water Penetration: Areas shall be tested according to ASTM E 1105 at a minimum uniform and cyclic static-air-pressure difference of 0.67 times the static-air-pressure difference specified for laboratory testing under "Performance Requirements" Article, but not less than 4.18 lbf/sq. ft., and shall not evidence water penetration.
3. Water Spray Test: Before installation of interior finishes has begun, a minimum area of 75 feet by 1 story of aluminum-framed systems designated by Architect shall be tested according to AAMA 501.2 and shall not evidence water penetration.

B. Repair or remove work if test results and inspections indicate that it does not comply with specified requirements.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

D. Aluminum-framed assemblies will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

3.5 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.

B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 084113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:
   1. Swinging doors.
   2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:
   1. Mechanical door hardware.
   2. Electromechanical door hardware.
   3. Automatic operators.
   4. Cylinders specified for doors in other sections.

C. Related Sections:
   1. Division 08 Section “Doors Hardware Schedule”.
   2. Division 08 Section “Hollow Metal Doors and Frames”.
   3. Division 08 Section “Folding Doors”.
   4. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
   5. Division 28 Section “Integrated Access Control Hardware Devices”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
   1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
   2. ICC/IBC - International Building Code.
   3. NFPA 70 - National Electrical Code.
   4. NFPA 80 - Fire Doors and Windows.
   5. NFPA 101 - Life Safety Code.
   6. NFPA 105 - Installation of Smoke Door Assemblies.
   7. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
   8. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
   1. ANSI/BHMA Certified Product Standards - A156 Series.
   2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
   3. ANSI/UL 294 - Access Control System Units.
   4. UL 305 - Panic Hardware.
   5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
   1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
   2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
   3. Content: Include the following information:
      a. Type, style, function, size, label, hand, and finish of each door hardware item.
      b. Manufacturer of each item.
      c. Fastenings and other pertinent information.
      d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
      e. Explanation of abbreviations, symbols, and codes contained in schedule.
      f. Mounting locations for door hardware.
      g. Door and frame sizes and materials.
      h. Warranty information for each product.
   4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:
   1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
      a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
      b. Complete (risers, point-to-point) access control system block wiring diagrams.
      c. Wiring instructions for each electronic component scheduled herein.
   2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:
   1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
   1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
   2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
   1. Function of building, purpose of each area and degree of security required.
   2. Plans for existing and future key system expansion.
   3. Requirements for key control storage and software.
   4. Installation of permanent keys, cylinder cores and software.
   5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
   1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:
1. Ten years for mortise locks and latches.
2. Five years for exit hardware.
3. Twenty five years for manual overhead door closer bodies.
4. Five years for motorized electric latch retraction exit devices.
5. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
1. Quantity: Provide the following hinge quantity:
   a. Two Hinges: For doors with heights up to 60 inches.
   b. Three Hinges: For doors with heights 61 to 90 inches.

c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
   a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
   b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
   a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
   b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
4. Hinge Options: Comply with the following:
   a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
5. Manufacturers:
   a. Bommer Industries (BO).
   b. Hager Companies (HA).
   c. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
1. Manufacturers:
   a. Bommer Industries (BO).
   b. Ives (IV).
   c. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
1. Manufacturers:
   a. Hager Companies (HA) - ETW-QC (# wires) Option.
   b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC (# wires) Option.

B. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
1. Manufacturers:
   a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) - EL-CEPT Series.
   b. Securitron (SU) - EL-CEPT Series.
   c. Von Duprin (VD) - EPT-10 Series.

C. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
   1. Provide one each of the following tools as part of the base bid contract:
      a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Electrical Connecting Kit: QC-R001.
      b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - Connector Hand Tool: QC-R003.
   2. Manufacturers:
      a. Hager Companies (HA) - Quick Connect.
      b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) - QC-C Series.

2.4 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
   1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
   2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
   3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
   4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
   5. Manufacturers:
      a. Burns Manufacturing (BU).
      b. Hiawatha, Inc. (HI).
      c. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

C. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
   1. Threaded mortise cylinders with rings and cams to suit hardware application.
   2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
   3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
   4. Tubular deadlocks and other auxiliary locks.
   5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
   6. Keyway: Match Facility Standard.

D. Interchangeable Cores: Provide small format interchangeable cores as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.

E. Keying System: Each type of lock and cylinders to be factory keyed.
1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

F. Key Quantity: Provide the following minimum number of keys:
1. Key Blanks per Un-combinated: Four (4)
2. Construction Keys (where required): Ten (10).
3. Construction Control Keys (where required): Two (2).

G. Construction Keying: Provide temporary keyed construction cores.

H. Key Registration List (Bitting List):
1. Furnish a list of opening numbers with locking devices, showing cylinder types and quantities required when cylinders or cores are to be keyed by owner.

2.6 KEY CONTROL

A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
1. Manufacturers:
a. Lund Equipment (LU).
b. MMF Industries (MM).
c. Telkee (TK).

2.7 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
1. Where specified, provide status indicators with highly reflective color and wording for “locked/unlocked” or “vacant/occupied” with custom wording options if required. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of the indicator status. Indicator window size to be a minimum of 2.1” x 0.6” with a curved design allowing a 180 degree viewing angle with protective covering to prevent tampering.
2. Manufacturers:
a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. Sargent Manufacturing (SA) - 8200 Series.
c. Schlage (SC) - L9000 Series.

2.8 AUXILIARY LOCKS

A. Mortise Deadlocks, Small Case: ANSI/BHMA A156.36, Grade 1, small case mortise type deadlocks constructed of heavy gauge wrought corrosion resistant steel. Steel or stainless steel bolts with a 1" throw and hardened steel roller pins. Deadlocks to be products of the same source manufacturer and keyway as other specified locksets.
1. Manufacturers:

a. Corbin Russwin Hardware (RU) - DL4000 Series.
b. Sargent Manufacturing (SA) - 4870 Series.
c. Schlage (SC) - L460 Series.

2.9 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.10 ELECTROMAGNETIC LOCKING DEVICES

A. Surface Electromagnetic Locks (Heavy Duty): Electromagnetic locks to be surface mounted type tested to ANSI A156.23, Grade 2 with minimum holding force strength of 1,200 pounds. Locks to be capable of either 12 or 24 voltage and be UL listed for use on fire rated door assemblies. Electronics are to be fully sealed against tampering and allow exterior weatherproof applications. As indicated in Hardware Sets, provide specified mounting brackets and housings. Power supply to be by the same manufacturer as the lock with combined products having a lifetime replacement warranty.
1. Manufacturers:
a. Securitron (SU) - M62 Series.
b. Securitron (SU) - M82 Series.

2.11 ELECTRIC STRIKES

A. Standard Electric Strikes: Electric strikes tested to ANSI/BHMA A156.31, Grade 1, for use on non-rated or fire rated openings. Strikes shall be of stainless steel construction tested to a minimum of 1500 pounds of static strength and 70 foot-pounds of dynamic strength with a minimum endurance of 1 million operating cycles. Provide strikes with 12 or 24 VDC capability, fail-secure unless otherwise specified. Where specified provide latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Manufacturers:
a. HES (HS) - 1500/1600 Series.

B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.12 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
   1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
   2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
   3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
   4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
   5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
      a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
      b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
   6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
   7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
   8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
   9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
   10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
   1. Manufacturers:
      a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
      b. Sargent Manufacturing (SA) - 80 Series.
      c. Von Duprin (VD) - 35A/98 XP Series.

2.13 ELECTROMECHANICAL EXIT DEVICES

A. Electromechanical Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices subject to same compliance standards and requirements as mechanical exit devices. Electrified exit devices to be of type and design as specified below and in the hardware sets.
   1. Energy Efficient Design: Provide devices which have a holding current draw of 15mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
   2. Where conventional power supplies are not sufficient, include any specific controllers required to provide the proper inrush current.
   3. Motorized Electric Latch Retraction: Devices with an electric latch retraction feature must use motors which have a maximum current draw of 600mA. Solenoid driven latch retraction is not acceptable.
   4. Manufacturers:

a. Corbin Russwin Hardware (RU) - ED5000 Series.
b. Sargent Manufacturing (SA) - 80 Series.
c. Von Duprin (VD) - 35A/98 XP Series.

2.14 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.
1. Manufacturers:
a. Corbin Russwin Hardware (RU) - DC8000 Series.
b. Norton Door Controls (NO) - 9500 Series.
c. Sargent Manufacturing (SA) - 281 Series.

C. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Manufacturers:
a. Corbin Russwin Hardware (RU) - DC6000 Series.
b. Norton Door Controls (NO) - 7500 Series.
c. Sargent Manufacturing (SA) - 351 Series.
d. Yale Commercial(YA) - 4400 Series.

2.15 ELECTROMECHANICAL DOOR OPERATORS

A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Standard: Certified ANSI/BHMA A156.19.

C. Performance Requirements:
1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.

E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19.

F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

I. Wireless Interface: Operator units shall have a wireless interface via a mobile device for ease of installation and setup.

J. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Norton Door Controls (NO) - 6300 Series.
2. {Other}.

2.16 ELECTROHYDRAULIC DOOR OPERATORS

A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.
1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Standard: Certified ANSI/BHMA A156.19.

C. Performance Requirements:
1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.

E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.

F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

I. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. LCN Closers (LC) - 9100 Series.
2. Norton Door Controls (NO) - 5700 LEO Series.

2.17 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
1. Manufacturers:
    a. Hiawatha, Inc. (HI).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
1. Manufacturers:
    a. Rixson Door Controls (RF).
    b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
    c. Sargent Manufacturing (SA).

2.18 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets.
1. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated.
2. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
   1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
   1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:
   1. National Guard Products (NG).
   2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
   3. Reese Enterprises, Inc. (RE).

2.19 ELECTRONIC ACCESSORIES

A. Key Switches: Key switches furnished standard with stainless steel single gang face plate with a 12/24VDC bi-color LED indicator. Integral backing bracket permits integration with any 1 1/4" or 1 1/2" mortise type cylinder. Key switches available as momentary or maintained action and in narrow face plate options.
   1. Manufacturers:
      a. Alarm Controls (AK) - MCK Series.
      b. Securitron (SU) - MK Series.

B. Request-to-Exit Motion Sensor: Request-to-Exit Sensors motion detectors specifically designed for detecting exiting through a door from the secure area to a non-secure area. Include built-in timers (up to 60 second adjustable timing), door monitor with sounder alert, internal vertical pointability coverage, 12VDC or 24VDC power and selectable relay trigger with fail safe/fail secure modes.
   1. Manufacturers:
      a. Alarm Controls (AK) - SREX Series.
      b. Securitron (SU) - XMS Series.

C. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
   1. Manufacturers:
      a. Security Door Controls (SD) - DPS Series.
      b. Securitron (SU) - DPS Series.

D. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control

and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
2. Manufacturers:
   a. Securitron (SU) - AQL Series.

2.20 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.21 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
2. Submit documentation of incomplete items in the following formats:
   a. PDF electronic file.
   b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
   1. Quantities listed are for each pair of doors, or for each single door.
   2. The supplier is responsible for handing and sizing all products.
   3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
   4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Refer to Section 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 087100

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:
   1. Glass products.
   2. Insulating glass.
   3. Glazing sealants.
   4. Glazing tapes.
   5. Miscellaneous glazing materials.

B. Related Requirements:
   1. Section 081113 “Metal Doors and Frames” for factory-cut openings in doors, and borrowed lite frames, including stops and moldings.
   2. Section 084113 “Aluminum Framed Entrances and Storefront” for storefront glazing provided with aluminum architectural entrance systems.
   3. Section 102800 “Toilet, Bath and Laundry Accessories” for mirrors.

1.3 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters in accordance with ASTM C1036.

C. IBC: International Building Code.

D. Interspace: Space between lites of an insulating-glass unit.

E. Fire-Protection-Rated Glazing: Glazing in rated doors and openings up to 45 minutes, limited in size, and not capable of blocking radiant heat.

F. Fire-Resistance-Rated Glazing: Glazing that prevents spread of fire and smoke and radiant heat; used in rated wall and door applications 60 minutes and above without size limitations.

1.4 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.5 ACTION SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.6 INFORMATIONAL SUBMITTALS

A. Product Certificates: For glass and glazing products, from manufacturer.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for tinted glass coated glass insulating glass and glazing sealants.
1. For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.

C. Sample Warranties: For special warranties.

1.7 QUALITY ASSURANCE

A. Comply with recommendations in the "Glazing Manual" of the Glass Association of North America and the "Sealant Manual" of the Flat Glass Marketing Association except as shown or specified otherwise, and except as specifically recommended otherwise by the manufacturers of the glass and glazing materials.

B. Fabricated-Glass Manufacturer Qualifications: A qualified manufacturer of fabricated glass units who is approved by primary glass manufacturer.

C. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; and whose work has resulted in glass installations with a record of successful in-service performance.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials in accordance with manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F (4.4 deg C).

1.10 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
   1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.
   1. Warranty Period: 10 years from date of Substantial Completion.

C. Manufacturer's Special Warranty for Heat-Soaked Tempered Glass: Manufacturer agrees to replace heat-soaked tempered glass units that spontaneously break due to nickel sulfide (NiS) inclusions at a rate exceeding 0.3 percent within specified warranty period. Coverage for any other cause is excluded.
   1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations Glass: Obtain from single source from single manufacturer for each glass type.

B. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

C. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
   1. For monolithic-glass lites, properties are based on units with lites 6 mm thick, unless indicated otherwise.
   2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
   3. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
   4. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
   5. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
   1. NGA Publications: "Glazing Manual."
   2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR A7, "Sloped Glazing Guidelines."
   3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
   4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.

D. Thickness: Where glass thickness is indicated, it is a minimum Provide glass that complies with performance requirements and is not less than thickness indicated.
   1. Minimum Glass Thickness for Exterior Lites: 6 mm.

E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass as needed to comply with "Performance Requirements" Article. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. PPG.
   2. Guardian Industries, Corp.
   3. Spectrum Glass Products Div. of H.H. Robertson Company.
   4. Technical Glass Products.
   5. Vitro Architectural Glass.

2.5 GLASS PRODUCTS

A. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.
   1. Thickness: 1/4 inch.

B. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
   1. Thickness: 1/4 inch.

2.6 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified in accordance with ASTM E2190.

B. Organically Sealed Insulating Glass Units; ASTM C 1048, applicable Type and Class for glass indicated below, quality q3 for Type I glass; manufacturer's standard edge construction of spacers and sealants permanently bonded to glass surfaces and hermetically sealed to provide a dehydrated air space 1/2 inch thick with -60 degrees F. dew point; fabricated of the following glass
   1. Exterior Glass: Tempered Glass
      a. Low-e coating, Sputter-coating (vacuum deposition process) on second surface
   2. Interior Glass: Tempered Glass

C. Basis of Design Product:
   1. PPG Industries, Inc., Solarban 60.

2.7 GLAZING SEALANTS

A. General:
   1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
   2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.

B. Neutral-Curing Silicone Glazing Sealant, Class 100/50: Complying with ASTM C920, Type S, Grade NS, Use NT.

2.8 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:
   1. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:
   1. AAMA 810.1, Type 1, for glazing applications in which tape acts as primary sealant.
   2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.9 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, recommended in writing by manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Type recommended in writing by sealant or glass manufacturer.

D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks:
1. Type recommended in writing by sealant or glass manufacturer.

F. Safety Marking Decals: Opaque decals, 4-inch diameter, color as selected by the **Owner's Project Representative** from manufacturer's standard colors.

2.10 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.
a. Temperature Change:120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:
1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants.

D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Provide spacers for glass lites where length plus width is larger than 50 inches.
   1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
   2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

F. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.

G. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

H. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended in writing by gasket manufacturer.

3.4 MARKING DECALS

A. A. Install two marking decals on each transparent glass door, and on each transparent glass sidelight which is wider than 20 inch between stiles. Locate decals midway between stiles 34 inch and 64 inch above the floorline.

3.5 CLEANING AND PROTECTION

A. Immediately after installation, remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains. If despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer.
   1. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

D. Wash glass on both exposed surfaces not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION 088000

MONTGOMERY COUNTY NY

Made of Something Stronger

DIVISION 9

Finishes

SECTION 090190.52 – MAINTENANCE REPAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes maintenance repainting of existing steel windows, metal frames and cabinet units as follows:
   1. Removing existing paint.
   2. Patching substrates.
   3. Repainting, including staining and varnishing of wood.

B. Related Requirements:
   1. Section 013516 "Alteration Project Procedures" for general remodeling, renovation, repair, and maintenance requirements.
   2. Section 040110 "Masonry Cleaning" for cleaning and removing paint from masonry.
   3. Section 099113 "Exterior Painting," and Section 099123 "Interior Painting," for Paint materials and systems.

1.3 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.

E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.

F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.

G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

H. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.

I. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 SEQUENCING AND SCHEDULING

A. Perform maintenance repainting in the following sequence, which includes work specified in this and other Sections:
1. Dismantle existing surface-mounted objects and hardware except items indicated to remain in place. Tag items with location identification and protect.
2. Verify that temporary protections have been installed.
3. Examine condition of surfaces to be painted.
4. Remove existing paint to the degree required for each substrate and surface condition of existing paint.
5. Apply paint system.
6. Reinstall dismantled surface-mounted objects and hardware unless otherwise indicated.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include recommendations for product application and use.
2. Include test data substantiating that products comply with requirements.

B. Samples: For each type of paint system and each pattern, color, and gloss; in sizes indicated below.
1. Include stepped Samples defining each separate coat, including fillers and primers. Resubmit until each required sheen, color, and texture is achieved.
2. For each painted color being matched to a standardized color-coding system, include the color chips from the color-coding-system company with Samples.
3. Include a list of materials for each coat of each Sample.
4. Label each Sample for location and application.
5. Sample Size:
a. Painted Surfaces: 4-by-8-inch Samples for each color and material, on hardboard.

C. Product List: For each paint product indicated, include the following:
1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each MPI-product category specified in paint systems, with the proposed product highlighted.
3. VOC content.

1.7 INFORMATIONAL SUBMITTALS

A. Color Matching Certificate: For computer-matched colors.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra paint materials, from the same production run, that match products applied and that are packaged with protective covering for storage and identified with labels describing contents, including material, finish, source, and location on building.
1. Quantity: Furnish Owner with an additional 5 percent, but not less than 1 gal. (3.8 L) or one case, as appropriate, of each material and color applied.

1.9 QUALITY ASSURANCE

A. Color Matching: Custom computer-match paint colors to colors indicated.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste daily.

1.11 FIELD CONDITIONS

A. Weather Limitations: Proceed with maintenance repainting only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

B. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

C. Do not apply paint in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
   1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer for surface preparation and during paint application and drying periods.

PART 2 - PRODUCTS

2.1 PREPARATORY CLEANING MATERIALS

A. Water: Potable.

B. Hot Water: Water heated to a temperature of 140 to 160 deg F (60 to 71 deg C).

C. Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium pyrophosphate (TSPP), 1/2 cup of laundry detergent that contains no ammonia, 5 quarts of 5 percent sodium hypochlorite bleach, and 15 quarts of warm water for every 5 gal. of solution required.

D. Mildewcide: Commercial proprietary mildewcide or a job-mixed solution prepared by mixing 1/3 cup of household detergent that contains no ammonia, 1 quart of 5 percent sodium hypochlorite bleach, and 3 quarts of warm water.

E. Abrasives for Ferrous Metal Cleaning: Aluminum oxide paper, emery paper, fine steel wool, steel scrapers, and steel-wire brushes of various sizes.

F. Rust Remover: Manufacturer's standard phosphoric acid-based gel formulation, also called "naval jelly," for removing corrosion from iron and steel.

2.2 PAINT REMOVERS

A. Alkaline Paste Paint Remover: Manufacturer's standard alkaline paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methylene chloride.

B. Covered or Skin-Forming Alkaline Paint Remover: Manufacturer's standard covered or skin-forming alkaline paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methylene chloride.

C. Solvent-Type Paste Paint Remover: Manufacturer's standard water-rinsable, solvent-type paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project.

D. Low-Odor, Solvent-Type Paste Paint Remover: Manufacturer's standard low-odor, water-rinsable, solvent-type paste, gel, or foamed emulsion formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methanol or methylene chloride.

E. Covered, Solvent-Type Paste Paint Remover: Manufacturer's standard, low-odor, covered, water-rinsable, solvent-type paste or gel formulation for removing paint from masonry, stone, wood, plaster, or metal as required to suit Project; and containing no methanol or methylene chloride.

2.3 PAINT, GENERAL

A. Material Compatibility:
   1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. Colors: As selected by Owner from full range of industry colors.

2.4 PAINT MATERIALS, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Transition Coat: Paint manufacturer's recommended coating for use where a residual existing coating is incompatible with the paint system.

2.5 PATCHING MATERIALS

A. Wood-Patching Compound: Two-part, epoxy-resin, wood-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of wood repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be designed for filling voids in damaged wood materials that have deteriorated from weathering and decay. Compound shall be capable of filling deep holes and spreading to feather edge.

B. Metal-Patching Compound: Two-part, polyester-resin, metal-patching compound; knife-grade formulation as recommended in writing by manufacturer for type of metal repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be produced for filling metal that has deteriorated from corrosion. Filler shall be capable of filling deep holes and spreading to feather edge.

C. Cementitious Patching Compounds: Cementitious patching compounds and repair materials specifically manufactured for filling cementitious substrates and for sanding or tooling prior to repainting; formulation as recommended in writing by manufacturer for type of cementitious substrate indicated, exposure to weather and traffic, the detail of work, and site conditions.

D. Gypsum-Plaster Patching Compound: Finish coat plaster and bonding compound according to ASTM C842 and manufacturer's written instructions.

PART 3 - EXECUTION

3.1 PROTECTION

A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
   1. Cover adjacent surfaces with materials that are proven to resist chemical solutions being used unless the solutions will not damage adjacent surfaces. Use protective materials that are UV resistant and waterproof. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
   2. Do not apply chemical solutions during winds of sufficient force to spread them to unprotected surfaces.
   3. Neutralize and collect alkaline and acid wastes before disposal.
   4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.2 MAINTENANCE REPAINTING, GENERAL

A. Maintenance Repainting Appearance Standard: Completed work is to have a uniform appearance as viewed by Architect from building interior at 5 feet away from painted surface and from building exterior at 20 feet away from painted surface.

B. Execution of the Work: In repainting surfaces, disturb them as minimally as possible and as follows:
   1. Remove failed coatings and corrosion and repaint.
   2. Verify that substrate surface conditions are suitable for repainting.
   3. Allow other trades to repair items in place before repainting.

C. Mechanical Abrasion: Where mechanical abrasion is needed for the work, use gentle methods, such as scraping and lightly hand sanding, that will not abrade softer substrates, reducing clarity of detail.

D. Heat Processes: Do not use torches, heat guns, or heat plates.

3.3 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of painting work. Comply with paint manufacturer's written instructions for inspection.

B. Maximum Moisture Content of Substrates: Do not begin application of coatings unless moisture content of exposed surface is below the maximum value recommended in writing by paint manufacturer and not greater than the following maximum values when measured with an electronic moisture meter appropriate to the substrate material:
   1. Concrete: 12 percent.
   2. Gypsum Board: 12 percent.
   3. Gypsum Plaster: 12 percent.

4. Masonry (Clay and CMU): 12 percent.
5. Portland Cement Plaster: 12 percent.
6. Wood: 15 percent.

C. Alkalinity: Do not begin application of coatings unless surface alkalinity is within range recommended in writing by paint manufacturer. Conduct alkali testing with litmus paper on exposed plaster, cementitious, and masonry surfaces.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
1. If existing surfaces cannot be prepared to an acceptable condition for proper finishing by using specified surface-preparation methods, notify Architect in writing.

E. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.4 PREPARATORY CLEANING

A. General: Use the gentlest, appropriate method necessary to clean surfaces in preparation for painting. Clean all surfaces, corners, contours, and interstices.

B. Detergent Cleaning: Wash surfaces by hand using clean rags, sponges, and bristle brushes. Scrub surface with detergent solution and bristle brush until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet. Rinse with water applied by clean rags or sponges.

C. Solvent Cleaning: Use solvent cleaning to remove oil, grease, smoke, tar, and asphalt from painted or unpainted surfaces before other preparation work. Wipe surfaces with solvent using clean rags and sponges. If necessary, spot-solvent cleaning may be employed just prior to commencement of paint application, provided enough time is allowed for complete evaporation. Use clean solvent and clean rags for the final wash to ensure that all foreign materials have been removed. Do not use solvents, including primer thinner and turpentine, that leave residue.

D. Mildew: Clean off existing mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with bristle brush or sponge and detergent solution. Scrub mildewed areas with mildewcide. Rinse with water applied by clean rags or sponges.

E. Chemical Rust Removal:
1. Remove loose rust scale with specified abrasives for ferrous-metal cleaning.
2. Apply rust remover with brushes or as recommended in writing by manufacturer.
3. Allow rust remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing. Do not allow extended dwell time.
4. Wipe off residue with mineral spirits and either steel wool or soft rags, or clean with method recommended in writing by manufacturer to remove residue.
5. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
6. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

F. Mechanical Rust Removal:
1. Remove rust with specified abrasives for ferrous-metal cleaning. Clean to bright metal.
2. Wipe off residue with mineral spirits and either steel wool or soft rags.
3. Dry immediately with clean, soft cloths. Follow direction of grain in metal.
4. Prime immediately to prevent rust. Do not touch cleaned metal surface until primed.

3.5 PAINT REMOVAL

A. General: Remove paint where indicated. Where cleaning methods have been attempted and further removal of the paint is required because of incompatible or unsatisfactory surfaces for repainting, remove paint to extent required by conditions.
   1. Application: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
      a. Apply materials to all surfaces, corners, contours, and interstices, to provide a uniform final appearance without streaks.
      b. After work is complete, remove protection no longer required. Remove tape and adhesive marks.
   2. Brushes: Use brushes that are resistant to chemicals being used.
      a. Metal Substrates: If using wire brushes on metal, use brushes of same metal composition as metal being treated.
      b. Wood Substrates: Do not use wire brushes.
   3. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that spray methods do not damage surfaces.
      a. Equip units with pressure gages.
      b. Unless otherwise indicated, hold spray nozzle at least 6 inches from surface and apply material in horizontal, back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
      c. For chemical spray application, use low-pressure tank or chemical pump suitable for chemical indicated, equipped with nozzle having a cone-shaped spray.
      d. For water-spray application, use fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.
      e. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F (60 and 71 deg C) at flow rates indicated.

B. Paint Removal with Hand Tools: Remove paint manually using hand-held scrapers, wire brushes, sandpaper, and metallic wool as appropriate for the substrate material.

C. Paint Removal with Alkaline Paste Paint Remover:
   1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
   2. Apply paint remover to dry, painted surface with brushes.
   3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
   4. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.
   5. Repeat process if necessary to remove all paint.

D. Paint Removal with Covered or Skin-Forming Alkaline Paint Remover:
   1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
   2. Apply paint remover to dry, painted surface with brushes or as recommended in writing by manufacturer.
   3. Apply cover according to manufacturer's written instructions.
   4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
   5. Scrape off paint and remover.
   6. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.

7. For spots of remaining paint, apply alkaline paste paint remover according to "Paint Removal with Alkaline Paste Paint Remover" Paragraph.

E. Paint Removal with Solvent-Type Paste Paint Remover:
1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to dry, painted surface with natural-fiber cleaning brush, deep-nap roller, or large paintbrush. Apply in one or two coats according to manufacturer's written instructions.
3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
4. Use mechanical methods recommended in writing by manufacturer to remove chemicals and paint residue.
5. Repeat process if necessary to remove all paint.

F. Paint Removal with Covered, Solvent-Type Paste Paint Remover:
1. Remove loose and peeling paint using scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with natural-fiber cleaning brush, deep-nap roller, or large paint brush or as recommended in writing by manufacturer.
3. Apply cover according to manufacturer's written instructions.
4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
5. Scrape off paint and remover.
6. Use mechanical methods recommended in writing by manufacturer to remove remaining chemicals and paint residue.

3.6 SUBSTRATE REPAIR

A. General: Repair substrate surface defects that are inconsistent with the surface appearance of adjacent materials and finishes.

B. Wood Substrate:
1. Repair wood defects including dents and gouges more than 1/8 inch in size and all holes and cracks by filling with wood-patching compound and sanding smooth. Reset or remove protruding fasteners.
2. Where existing paint is allowed to remain, sand irregular buildup of paint, runs, and sags to achieve a uniformly smooth surface.

C. Cementitious Material Substrate:
1. General: Repair defects including dents and chips more than 1/4 inch in size and all holes and cracks by filling with cementitious patching compound and sanding smooth. Remove protruding fasteners.
2. New and Bare Plaster: Neutralize surface of plaster with mild acid solution as recommended in writing by paint manufacturer. In lieu of acid neutralization, follow manufacturer's written instruction for primer or transition coat over alkaline plaster surfaces.
3. Concrete, Cement Plaster, and Other Cementitious Products: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. If surfaces are too alkaline to paint, correct this condition before painting.

D. Gypsum-Plaster and Gypsum-Board Substrates:
1. Repair defects including dents and chips more than 1/8 inch in size and all holes and cracks by filling with gypsum-plaster patching compound and sanding smooth. Remove protruding fasteners.

2. Rout out surface cracks to remove loose, unsound material; fill with patching compound and sand smooth.

E. Metal Substrate:
1. Preparation: Treat repair locations by wire-brushing and solvent cleaning. Use chemical or mechanical rust removal method to clean off rust.
2. Defects in Metal Surfaces: Repair non-load-bearing defects in existing metal surfaces, including dents and gouges more than 1/16 inch deep or 1/2 inch across and all holes and cracks by filling with metal-patching compound and sanding smooth. Remove burrs and protruding fasteners.
3. Priming: Prime iron and steel surfaces immediately after repair to prevent flash rusting. Stripe paint corners, crevices, bolts, welds, and sharp edges. Apply two coats to surfaces that are inaccessible after completion of the Work.

3.7 PAINT APPLICATION, GENERAL

A. Comply with manufacturers' written instructions for application methods unless otherwise indicated in this Section.

B. Prepare surfaces to be painted according to the Surface-Preparation Schedule and with manufacturer's written instructions for each substrate condition.

C. Apply a transition coat over incompatible existing coatings.

D. Metal Substrate: Stripe paint corners, crevices, bolts, welds, and sharp edges before applying full coat. Apply two coats to surfaces that are inaccessible after completion of the Work. Tint stripe coat different than the main coating and apply with brush.

E. Blending Painted Surfaces: When painting new substrates patched into existing surfaces or touching up missing or damaged finishes, apply coating system specified for the specific substrate. Apply final finish coat over entire surface from edge to edge and corner to corner.

3.8 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.9 SURFACE-PREPARATION SCHEDULE

A. General: Before painting, prepare surfaces for painting according to applicable requirements specified in this schedule.
1. Examine surfaces to evaluate each surface condition according to paragraphs below.

2. Where existing degree of soiling prevents examination, preclean surface and allow it to dry before making an evaluation.
3. Repair substrate defects according to "Substrate Repair" Article.

B. Surface Preparation for MPI DSD 0 Degree of Surface Degradation:
1. Surface Condition: Existing paint film in good condition and tightly adhered.
2. Paint Removal: Not required.
3. Preparation for Painting: Wash surface by detergent cleaning; use solvent cleaning where needed. Roughen or degloss cleaned surfaces to ensure paint adhesion according to paint manufacturer's written instructions.

C. Surface Preparation for MPI DSD 1 Degree of Surface Degradation:
1. Surface Condition: Paint film cracked or broken but adhered.
2. Paint Removal: Scrape by hand-tool cleaning methods to remove loose paint until only tightly adhered paint remains.
3. Preparation for Painting: Wash surface by detergent cleaning; use other cleaning methods for small areas of bare substrate if required. Roughen, degloss, and sand the cleaned surfaces to ensure paint adhesion and a smooth finish according to paint manufacturer's written instructions.

D. Surface Preparation for MPI DSD 2 Degree of Surface Degradation:
1. Surface Condition: Paint film loose, flaking, or peeling.
2. Paint Removal: Remove loose, flaking, or peeling paint film by hand-tool or chemical paint-removal methods.
3. Preparation for Painting: Wash surface by detergent cleaning; use solvent cleaning where needed. Use other cleaning methods for small areas of bare substrate if required. Sand surfaces to smooth remaining paint film edges. Prepare bare cleaned surface to be painted according to paint manufacturer's written instructions for substrate construction materials.

E. Surface Preparation for MPI DSD 3 Degree of Surface Degradation:
1. Surface Condition: Paint film severely deteriorated, obscuring fine architectural detail work because of paint-layer buildup, and surface indicated to have paint completely removed.
2. Paint Removal: Completely remove paint film by hand-tool or chemical paint-removal methods. Remove rust.
3. Preparation for Painting: Prepare bare cleaned surface according to paint manufacturer's written instructions for substrate construction materials.

F. Surface Preparation for MPI DSD 4 Degree of Surface Degradation:
1. Surface Condition: Missing material, small holes and openings, and deteriorated or corroded substrate.
2. Substrate Preparation: Repair, replace, and treat substrate according to "Substrate Repair" Article and requirements in other Specification Sections.
3. Preparation for Painting: Sand substrate surfaces to smooth remaining paint film edges and prepare according to paint manufacturer's written instructions for substrate construction materials. Remove rust.
4. Painting: Paint as required for MPI DSD 2 degree of surface degradation.

END OF SECTION 090190.52

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.
3. Grid suspension systems for gypsum board ceilings.

B. Related Requirements:
1. Section 061053 “Miscellaneous Rough Carpentry” for wood furring, blocking, shims, and hanging strips required for other construction.
2. Section 078413 “Penetration Firestopping” for firestopping systems installed with non-load-bearing steel framing.
3. Section 078443 “Joint Firestopping” for joints in or between fire-resistance-rated constructions.
4. Section 092900 “Gypsum Board” for interior finishes supported by non-structural metal framing.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Studs and Runners: Provide documentation that framing members' certification is according to SIFA's "Code Compliance Certification Program for Cold-Formed Steel Structural and Non-Structural Framing Members."

1.4 INFORMATION SUBMITTALS

A. Product Certificates: For each type of code-compliance certification for studs and tracks.

B. Evaluation Reports: For embossed steel studs and runners and firestop tracks, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.

C. Qualification Data: For qualified Installer.

1.5 QUALITY ASSURANCE

A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association, the Steel Framing Industry Association, the Steel Stud Manufacturers Association or the Supreme Steel Framing System Association.

B. Installer Qualifications: Installer should be experienced in performing work of this Section and should have specialized in installation of work similar to that required for this project required by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Notify manufacturer of damaged materials received prior to installation.

B. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling as required by AISI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing."

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.

C. Horizontal Deflection: For wall assemblies, limited to 1/360 of the wall height based on horizontal loading of 10 lbf/sq. ft. (480 Pa).

D. Design framing systems in accordance with AISI S220, "North American Specification for the Design of Cold-Formed Steel Framing - Nonstructural Members," unless otherwise indicated.

E. Design Loads: As indicated on architectural Drawings or 5 lbf/sq. ft. (239 Pa) minimum as required by the Building Code of New York State.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. See "Corrosion Protection of Steel Framing" Article in the Evaluations for a discussion of corrosion-resistant coatings on components.
3. Protective Coating: Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized, unless otherwise indicated.

B. Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners.
1. Steel Studs and Runners:
   a. Minimum Base-Metal Thickness: As indicated on Drawings or as otherwise required for structural integrity of wall assembly as determined by steel stud manufacturer.
   b. Depth: As indicated on Drawings.
2. Dimpled Steel Studs and Runners:
   a. Minimum Base-Metal Thickness: As indicated on Drawings or as otherwise required for structural integrity of wall assembly as determined by steel stud manufacturer.
   b. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide the following:
1. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.
2) MBA Building Supplies; Slotted Deflecto Track.
3) Steel Network Inc. (The); VertiTrack VTD Series.
4) Superior Metal Trim; Superior Flex Track System (SFT).
5) Telling Industries; Vertical Slip Track.

D. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Fire Trak Corp.; Fire Trak System.

b. Grace Construction Products; FlameSafe FlowTrak System.
c. Metal-Lite, Inc.; The System.
d. Steel Network Inc. (The); VertiTrack VTD Series.

E. Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.
1. Depth: As indicated on Drawings.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel.

F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Minimum Base-Metal Thickness: As indicated on Drawings or as otherwise required for structural integrity of wall assembly as determined by steel stud manufacturer.
2. Depth: As indicated on Drawings.

G. Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission.
1. Configuration: hat shaped.

H. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.018 inch, and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

B. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch and minimum 1/2-inch- wide flanges.
1. Depth: As indicated on Drawings.

D. Furring Channels (Furring Members):
1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.

2. Steel Studs and Runners: ASTM C 645.
   a. Depth: As indicated on Drawings.

E. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Armstrong World Industries, Inc.; Drywall Grid Systems.
   b. Chicago Metallic Corporation; Drywall Grid System.
   c. USG Corporation; Drywall Suspension System.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.
1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide the following:
1. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8-inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.
1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

D. Install bracing at terminations in assemblies.

E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

B. Install studs so flanges within framing system point in same direction.
   1. Space studs as follows:
      a. Single-Layer Application: 16 inches o.c. unless otherwise indicated.
      b. Multilayer Application: 16 inches o.c. unless otherwise indicated.
      c. Tile Backing Panels: 16 inches o.c. unless otherwise indicated.

C. Where studs are installed directly against dissimilar metals at interior or exterior walls, install isolation strip between studs and wall panels.

D. Install studs so flanges within framing system point in same direction.

E. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
   1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
   2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
      a. Install two studs at each jamb unless otherwise indicated.
      b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
      c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
   3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
   4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
      a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.
   5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
   6. Curved Partitions:
      a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
      b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

F. Direct Furring:
   1. Screw to wood framing.
   2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

G. Z-Furring Members:

1. Erect insulation (specified in Section 072100 "Thermal Insulation") vertically and hold in place with Z-furring members spaced 24 inches o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

H. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than those required by referenced installation standards for assembly types and other assembly components indicated.
1. Hangers: 48 inches o.c.
2. Carrying Channels (Main Runners): 48 inches o.c.
3. Furring Channels (Furring Members): 16 inches o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
   a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
   a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092400 – CEMENT PLASTERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Interior vertical plasterwork.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.6 FIELD CONDITIONS

A. Comply with ASTM C926 requirements.

B. Interior Plasterwork: Maintain room temperatures at greater than 40 deg F (4.4 deg C) for at least 48 hours before plaster application, and continuously during and after application.
   1. Avoid conditions that result in plaster drying out during curing period. Distribute heat evenly; prevent concentrated or uneven heat on plaster.
   2. Ventilate building spaces as required to remove water in excess of that required for hydrating plaster in a manner that prevents drafts of air from contacting surfaces during plaster application and until plaster is dry.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated, provide cement plaster assemblies identical to those of assemblies tested for fire resistance according to ASTM E119 by a qualified testing agency.

2.2 METAL LATH

A. Expanded-Metal Lath: ASTM C847, cold-rolled carbon-steel sheet with ASTM A653/A653M, G60, hot-dip galvanized-zinc coating.
   1. Diamond-Mesh Lath: Flat or self-furring, 2.5 lb/sq. yd..
   2. Flat-Rib Lath: Rib depth of not more than 1/8 inch, 2.75 lb/sq. yd.
   3. 3/8-Inch Rib Lath: 3.4 lb/sq. yd.

B. Wire-Fabric Lath:
   1. Welded-Wire Lath: ASTM C933; self-furring, 1.4 lb/sq. yd.
   2. Woven-Wire Lath: ASTM C1032; self-furring, with stiffener wire backing, 1.4 lb/sq. yd.

C. Paper Backing: FS UU-B-790a, Type I, Grade D, Style 2 vapor-permeable paper.

2.3 ACCESSORIES

A. General: Comply with ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

B. Metal Accessories:
   1. Cornerite: Fabricated from metal lath with ASTM A653/A653M, G60, hot-dip galvanized-zinc coating.
   2. External- (Outside-) Corner Reinforcement: Fabricated from metal lath with ASTM A653/A653M, G60, hot-dip galvanized-zinc coating.
   3. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.
      a. Smallnose cornerbead with expanded flanges; use unless otherwise indicated.
      b. Smallnose cornerbead with perforated flanges; use on curved corners.
      c. Smallnose cornerbead with expanded flanges reinforced by perforated stiffening rib; use on columns and for finishing unit masonry corners.
      d. Bullnose cornerbead, radius 3/4 inch minimum, with expanded flanges; use at locations indicated on Drawings.
   4. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
   5. Control Joints: Fabricated from zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
   6. Expansion Joints: Fabricated from zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
   7. Two-Piece Expansion Joints: Fabricated from zinc-coated (galvanized) steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch wide; with perforated flanges.

2.4 MISCELLANEOUS MATERIALS

A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in cement plaster.

C. Bonding Compound: ASTM C932.

D. Fasteners for Attaching Metal Lath to Substrates: ASTM C1063.

E. Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter unless otherwise indicated.

2.5 PLASTER MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I.
   1. Color for Finish Coats: White.

B. Masonry Cement: ASTM C91, Type N.
   1. Color for Finish Coats: White.

C. Plastic Cement: ASTM C1328.

D. Lime: ASTM C206, Type S; or ASTM C207, Type S.

E. Sand Aggregate: ASTM C897.
   1. Color for Job-Mixed Finish Coats: White.

F. Perlite Aggregate: ASTM C35.

G. Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.
   1. Color: White.

H. Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems formulated with colorfast mineral pigments and fine aggregates; for use over cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes.
   1. Color: White.

2.6 PLASTER MIXES

A. General: Comply with ASTM C926 for applications indicated.
   1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
   1. Portland Cement Mixes:
      a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
      b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.
   2. Masonry Cement Mixes:
      a. Scratch Coat: Mix 1 part masonry cement and 2-1/2 to 4 parts aggregate.
      b. Brown Coat: Mix 1 part masonry cement and 3 to 5 parts aggregate, but not less than volume of aggregate used in scratch coat.
   3. Portland and Masonry Cement Mixes:
      a. Scratch Coat: For cementitious material, mix 1 part portland cement and 1 part masonry cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
      b. Brown Coat: For cementitious material, mix 1 part portland cement and 1 part masonry cement. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.

4. Plastic Cement Mixes:
   a. Scratch Coat: Mix 1 part plastic cement and 2-1/2 to 4 parts aggregate.
   b. Brown Coat: Mix 1 part plastic cement and 3 to 5 parts aggregate, but not less than volume of aggregate used in scratch coat.
5. Portland and Plastic Cement Mixes:
   a. Scratch Coat: For cementitious material, mix 1 part plastic cement and 1 part portland cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
   b. Brown Coat: For cementitious material, mix 1 part plastic cement and 1 part portland cement. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.

C. Base-Coat Mixes for Use over Unit Masonry and Concrete: Single base (scratch) coat for two-coat plasterwork on high-absorption plaster bases as follows:
1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
2. Masonry Cement Mix: Use 1 part masonry cement and 2-1/2 to 4 parts aggregate.
3. Portland and Masonry Cement Mix: For cementitious material, mix 1 part portland cement and 1 part masonry cement. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
4. Plastic Cement Mix: Use 1 part plastic cement and 2-1/2 to 4 parts aggregate.

D. Job-Mixed Finish-Coat Mixes:
1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material.
2. Masonry Cement Mix: Use 1 part masonry cement and 1-1/2 to 3 parts aggregate.
3. Portland and Masonry Cement Mix: For cementitious materials, mix 1 part portland cement and 1 part masonry cement. Use 1-1/2 to 3 parts aggregate per part of cementitious material.
4. Plastic Cement Mix: Use 1 part plastic cement and 1-1/2 to 3 parts aggregate.

E. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters, comply with manufacturer's written instructions.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare smooth, solid substrates for plaster according to ASTM C926.

3.3 INSTALLATION, GENERAL

A. Fire-Resistance-Rated Assemblies: Install components according to requirements for design designations from listing organization and publication indicated on Drawings.

B. Sound-Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

3.4 INSTALLING METAL LATH

A. Metal Lath: Install according to ASTM C1063.
   1. Partition Framing and Vertical Furring: Install lath type matching existing adjacent conditions.

3.5 INSTALLING ACCESSORIES

A. Install according to ASTM C1063 and at locations indicated on Drawings.

B. Reinforcement for External (Outside) Corners:
   1. Install lath-type, external-corner reinforcement or cornerbead at exterior locations.
   2. Install cornerbead at interior locations.

C. Control Joints: Locate as approved by Architect for visual effect and as follows:
   1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
      a. Vertical Surfaces: 144 sq. ft.
      b. Horizontal and Other Nonvertical Surfaces: 100 sq. ft.
   2. At distances between control joints of not greater than 18 feet o.c.
   3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
   4. Where control joints occur in surface of construction directly behind plaster.
   5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

3.6 PLASTER APPLICATION

A. General: Comply with ASTM C926.
   1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces when measured by a 10-foot straightedge placed on surface.
   2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
   3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Bonding Compound: Apply on unit masonry and concrete substrates for direct application of plaster.

C. Walls; Base-Coat Mixes for Use over Metal Lath: For scratch and brown coats, for three-coat plasterwork with 3/4-inch total thickness, as follows:
   1. Portland cement mixes.
   2. Masonry cement mixes.
   3. Portland and masonry cement mixes.
   4. Plastic cement mixes.
   5. Portland and plastic cement mixes.

D. Walls; Base-Coat Mix: For base (scratch) coat, for two-coat plasterwork and having 3/8-inch thickness on masonry, 1/4-inch thickness on concrete, as follows:
   1. Portland cement mix.
   2. Masonry cement mix.

3. Portland and masonry cement mix.
4. Plastic cement mix.
5. Portland and plastic cement mix.

E. Plaster Finish Coats: Apply to provide finish to match adjacent existing conditions.

F. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions.

G. Concealed Exterior Plasterwork: Where plaster application is used as a base for adhered finishes, omit finish coat.

H. Concealed Interior Plasterwork:
1. Where plaster application is concealed behind built-in cabinets, similar furnishings, and equipment, apply finish coat.
2. Where plaster application is concealed above suspended ceilings and in similar locations, omit finish coat.
3. Where plaster application is used as a base for adhesive application of tile and similar finishes, omit finish coat.

3.7 PLASTER REPAIRS

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.8 CLEANING AND PROTECTION

A. Remove temporary protection and enclosure of other work after plastering is complete. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 092400

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Interior gypsum board.
   2. Tile backing panels.

B. Related Requirements:
   1. Section 061053 “Miscellaneous Rough Carpentry” for wood framing and furring that supports gypsum board.
   2. Section 072100 “Thermal Insulation” for insulation and vapor retarders installed in assemblies that incorporate gypsum board.
   3. Section 092216 "Non-Structural Metal Framing" for non-structural steel framing and suspension systems that support gypsum board panels.
   4. Section 099123 “Interior Painting” for primers applied to gypsum board surfaces.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Installer should be experienced in performing work of this Section and should have specialized in installation of work similar to that required for this project.

1.5 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. American Gypsum.
   2. CertainTeed Corp.
   3. Georgia-Pacific Gypsum LLC.
   4. Lafarge North America Inc.
   5. National Gypsum Company.
   6. USG Corporation.

B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
   1. Thickness: 5/8 inch.
   2. Long Edges: Tapered.

C. Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M, Level 2.
   1. Core: 5/8 inch, Type X.
   2. Long Edges: Tapered.
   3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

D. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
   1. Core: 5/8 inch, Type X.
   2. Long Edges: Tapered.
   3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 SPECIALTY GYPSUM BOARD

A. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire-resistive capability.
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. American Gypsum; Firebloc Type C.
      b. CertainTeed Corp.; ProRoc Type C.
      c. Georgia-Pacific Gypsum LLC; Fireguard C.
      d. Lafarge North America Inc.; Firecheck Type C.
      e. National Gypsum Company; Gold Bond Fire-Shield C.
      f. USG Corporation; Firecode C Core.
   2. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
   3. Long Edges: Tapered.

B. Glass-Mat Interior Gypsum Board: ASTM C1658/C1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
   1. Core: 5/8 inch, Type X.
   2. Long Edges: Tapered.
   3. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

2.5 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
   1. Thickness: 5/8 inch.
   2. Mold Resistance: ASTM D3273, score of 10 as rated according to ASTM D3274.

B. Water-Resistant Gypsum Backing Board: ASTM C1396/C1396M, with manufacturer's standard edges.
   1. Core: 5/8 inch, Type X, or Type C as required by fire-resistance-rated assembly indicated on Drawings.

2.6 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.
   1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
   2. Shapes:
      a. Cornerbead.
      b. Bullnose bead.
      c. LC-Bead: J-shaped; exposed long flange receives joint compound.
      d. L-Bead: L-shaped; exposed long flange receives joint compound.
      e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
      f. Expansion (control) joint.
      g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:
   1. Interior Gypsum Board: Paper.
   2. Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
   1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
   2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
      a. Use setting-type compound for installing paper-faced metal trim accessories.
   3. Fill Coat: For second coat, use setting-type, sandable topping compound.
   4. Finish Coat: For third coat, use setting-type, sandable topping compound.

D. Joint Compound for Tile Backing Panels:
   1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
   2. Cementitious Backer Units: As recommended by backer unit manufacturer.
   3. Water-Resistant Gypsum Backing Board: Use setting-type taping compound and setting-type, sandable topping compound.

2.8 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
   1. Laminating adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
   1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
   2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
   1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Acoustical Joint Sealant: As specified in Section 079200 "Joint Sealants."

F. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

G. Vapor Retarder: As specified in Section 072100 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION AND FINISHING OF PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
   1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
   2. Fit gypsum panels around ducts, pipes, and conduits.
   3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:
   1. Wallboard Type: As indicated on Drawings.
   2. Type X: Vertical surfaces and sub-ceiling surfaces unless otherwise indicated.

3. Ceiling Type: Exposed ceiling surfaces, where not required for fire-resistance-rate assembly, unless otherwise indicated.
4. Abuse-Resistant Type: As indicated on Drawings.
5. Moisture- and Mold-Resistant Type: At walls containing plumbing fixtures and in rooms subject to moisture exposure, such as toilet and shower rooms.
6. Type C: Where required for specific fire-resistance-rated assembly indicated.

B. Single-Layer Application:
1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
   a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
   b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:
1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.4 APPLYING OF TILE BACKING PANELS

A. Water-Resistant Gypsum Backing Board: Install where indicated in wet areas.
1. Install with 1/4-inch gap where panels abut other construction or penetrations.

B. Where backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

C. Cementitious Backer Units: ANSI A108.11, at locations indicated to receive tile.

D. Water-Resistant Backing Board: Install where indicated with 1/4-inch gap where panels abut other construction or penetrations.

3.5 INSTALLATION OF TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:
   1. Cornerbead: Use at outside corners.
   2. LC-Bead: Use at exposed panel edges.
   3. L-Bead: Use where indicated.
   4. U-Bead: Use at exposed panel edges, where indicated.

3.6 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
   1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
   2. Level 2: Panels that are substrate for tile.
   3. Level 3: Panel surfaces receiving medium- or heavy-textured finishes before painting or heavy wall coverings where lighting conditions are not critical.
   4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
      a. Primer and its application to surfaces are specified in other Section 099123 "Interior Painting." Level 5 is suitable for surfaces receiving gloss and semigloss enamels and other surfaces subject to severe lighting where a high-quality gypsum board finish is indicated.

3.7 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 093013 – CERAMIC TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Ceramic mosaic tile .
2. Porcelain tile.
3. Glazed wall tile.
4. Thresholds.
5. Tile backing panels.
6. Waterproof membranes.
7. Crack isolation membranes.

B. Related Sections:
1. Section 033000 “Cast-in-Place Concrete” for concrete floor slab substrate.
2. Section 079200 "Joint Sealants" for sealing of expansion, contraction, control, and isolation joints in tile surfaces.
3. Section 092900 "Gypsum Board" for cementitious backer units.

1.3 DEFINITIONS

A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.

B. Face Size: Actual tile size, excluding spacer lugs.

C. Module Size: Actual tile size plus joint width indicated.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Initial Selection: For tile, grout, and accessories involving color selection.

D. Samples for Verification:
   1. Full-size units of each type and composition of tile and for each color and finish required.
   2. Full-size units of each type of trim and accessory for each color and finish required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Certificates: For each type of product, signed by product manufacturer.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
   2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

1.8 QUALITY ASSURANCE

A. Qualification Data: For Installer.
   1. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
   2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
   3. Installer employs only Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers for Project.
   4. Installer employs at least one installer for Project that has completed the Advanced Certification for Tile Installers (ACT) certification for installation of porcelain tile.
   5. Equivalent qualifications, as approved by the Architect.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

D. Store liquid materials in unopened containers and protected from freezing.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Subject to Compliance with requirements, ceramic tile flooring products and accessories that may be incorporated into the Work include, but are not limited to, the following:
   1. American Olean.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:
   1. Deutsche Steinzeug America, Inc.
   2. Interceramic.
   3. Lone Star Ceramics Company.
   4. Grupo Porcelanite.
   5. Portobello America, Inc.
   6. Seneca Tiles, Inc.
   7. Daltile; Division of Dal-Tile International Inc.

C. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
   1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.

D. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.

E. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
   1. Stone thresholds.
   2. Waterproof membrane.
   3. Crack isolation membrane.
   4. Cementitious backer units.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
   1. Provide tile complying with Standard grade requirements unless otherwise indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
   1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS

A. Factory-Mounted Mosaic Ceramic Tile: CT-1.
   1. Basis of Design Product: American Olean, Danya.
   2. Composition: Ceramic.
   3. Module Size: 3 by 3 inches.
   4. Thickness: 1/4 inch.
   5. Face: Pattern of design indicated, with manufacturer's standard edges.
   6. Surface: Slip resistant, with abrasive admixture.
   7. Dynamic Coefficient of Friction: Not less than 0.42.
   8. Finish: Unpolished.
   9. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
   10. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.
   11. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
      a. Base Cove: Cove, module size 6 inch by 12 inch.
      b. Wainscot Cap for Thinset Mortar Installations: Bead (bullnose) module size 3 inch by 12 inch.
      c. External Corners for Thinset Mortar Installations: Surface bullnose, module size 1 by 1 inch.
      d. Internal Corners: Field-butted square corners. For coved base and cap, use angle pieces designed to fit with stretcher shapes. For wall accent band, use quarter round trim.

B. Glazed Wall Tile: CT-2
   1. Basis of Design: American Olean, Danya.
   2. Composition: Ceramic.
   3. Module Size: 10 by 14 inches.
   4. Thickness: 5/16 inch.
   5. Face: Pattern of design indicated, with manufacturer's standard edges.
   6. Finish: Matte.
   7. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
   8. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.
   9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
      a. Wainscot Cap: Surface bullnose, module size 3 inch by 12 inch
      b. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
      c. External Corners: Surface bullnose, module size same as adjoining flat tile.
      d. Internal Corners: Field-butted square corners.

C. Trim
1. Tile Cove Base
a. Basis of Design: American Olean, Danya S-36C9T.
b. Module Size: 6 by 12 inches.
c. Face: Pattern of design indicated, with manufacturer's standard edges.
d. Finish: Matte.
e. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
f. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.
2. Cove Base Outcorner
a. Basis of Design: American Olean, Danya SC-36C9T.
b. Module Size: 6 by 1 inches.
c. Face: Pattern of design indicated, with manufacturer's standard edges.
d. Finish: Matte.
e. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
f. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.
3. Quarter Round
a. Basis of Design: American Olean, Danya A-106.
b. Module Size: 1 by 6 inches.
c. Face: Pattern of design indicated, with manufacturer's standard edges.
d. Finish: Matte.
e. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
f. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.
4. Bullnose
a. Basis of Design: American Olean, Danya P-43C9.
b. Module Size: 3 by 12 inches.
c. Face: Pattern of design indicated, with manufacturer's standard edges.
d. Finish: Matte.
e. Tile Color and Pattern: As selected by **Owner's Project Representative** from manufacturer's full range.
f. Grout Color: As selected by **Owner's Project Representative** from manufacturer's full range.

2.4 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.

B. Marble Thresholds: ASTM C 503, with a minimum abrasion resistance of 10 per ASTM C 1353 or ASTM C 241 and with honed finish.
1. Description: Uniform, fine- to medium-grained white stone with gray veining.

2.5 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 or ASTM C 1325, Type A, in maximum lengths available to minimize end-to-end butt joints.
   1. Thickness: 5/8 inch.

2.6 WATERPROOF MEMBRANE

A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
   1. Provide at shower enclosure only.

2.7 CRACK ISOLATION MEMBRANE

A. General: Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
   1. Provide at concrete slab on grade control joints.

2.8 SETTING MATERIALS

A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Bonsal American; an Oldcastle company.
      b. Bostik, Inc.
      c. Custom Building Products.
      d. Laticrete International, Inc.
      e. MAPEI Corporation.
      f. Mer-Kote Products, Inc.
      g. Summitville Tiles, Inc.
      h. TEC; a subsidiary of H. B. Fuller Company.
   2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

B. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Bonsal American; an Oldcastle company.
      b. Bostik, Inc.
      c. Custom Building Products.
      d. Laticrete International, Inc.
      e. MAPEI Corporation.
      f. Mer-Kote Products, Inc.
      g. Summitville Tiles, Inc.
      h. TEC; a subsidiary of H. B. Fuller Company.

2.9 GROUT MATERIALS

A. Standard Cement Grout: ANSI A118.6.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bonsal American; an Oldcastle company.
   b. Bostik, Inc.
   c. Custom Building Products.
   d. Laticrete International, Inc.
   e. MAPEI Corporation.
   f. Mer-Kote Products, Inc.
   g. Summitville Tiles, Inc.
   h. TEC; a subsidiary of H. B. Fuller Company.

B. Polymer-Modified Tile Grout: ANSI A118.7.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bonsal American; an Oldcastle company.
   b. Bostik, Inc.
   c. Custom Building Products.
   d. Laticrete International, Inc.
   e. MAPEI Corporation.
   f. Mer-Kote Products, Inc.
   g. Summitville Tiles, Inc.
   h. TEC; a subsidiary of H. B. Fuller Company.

C. Water-Cleanable Epoxy Grout: ANSI A118.3.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Bonsal American; an Oldcastle company.
   b. Bostik, Inc.
   c. Custom Building Products.
   d. Laticrete International, Inc.
   e. MAPEI Corporation.
   f. Mer-Kote Products, Inc.
   g. Summitville Tiles, Inc.
   h. TEC; a subsidiary of H. B. Fuller Company.

2.10 ELASTOMERIC SEALANTS

A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with the following requirements and with the applicable requirements in Section 079200 "Joint Sealants."
1. Sealants shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Use primers, backer rods, and sealant accessories recommended by sealant manufacturer.

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints unless otherwise indicated.

C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Dow Corning Corporation; Dow Corning 786.
   b. GE Silicones; a division of GE Specialty Materials; Sanitary 1700.

c. Laticrete International, Inc.; Latasil Tile & Stone Sealant.
d. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
e. Tremco Incorporated; Tremsil 600 White.

2.11 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.

C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

D. Floor Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

2.12 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
1. Add materials, water, and additives in accurate proportions.

B. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. At existing tile to receive new tile:
   1. Roughen surfaces which are glossy, painted, or effloresced, or which have loose surface material, by sanding or scarifying.
   2. Clean thoroughly to remove all waxes, oil, dirt, and dust.
   3. With epoxy adhesives, use primer when recommended by the manufacturer as proper for the particular backing.

B. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

C. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot (1:50) toward drains.

D. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 INSTALLATION OF CERAMIC TILE

A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
   1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
      a. Tile floors in wet areas.
      b. Tile floors composed of tiles 8 by 8 inches or larger.
      c. Tile floors composed of rib-backed tiles.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints.
   1. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

E. Where accent tile differs in thickness from field tile, vary setting-bed thickness so that tiles are flush.

F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
   1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
   2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.

3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.

G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
1. Ceramic Mosaic Tile: 1/16 inch.
2. Quarry Tile: 1/4 inch.
3. Paver Tile: 1/4 inch.
4. Glazed Wall Tile: 1/16 inc.
5. Decorative Thin Wall Tile: 1/16 inch.

H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

I. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.

J. Thresholds: Install thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thin set).
2. Do not extend waterproofing or crack isolation membrane under thresholds set in dry-set portland cement or latex-portland cement mortar. Fill joints between such thresholds and adjoining tile set on waterproofing or crack isolation membrane with elastomeric sealant.

K. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

L. Floor Sealer: Apply floor sealer to cementitious grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 INSTALLATION OF TILE BACKING PANELS

A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

3.5 INSTALLATION OF WATERPROOF MEMBRANES

A. Install waterproof membrane to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.

B. Allow waterproof membrane to cure and verify by testing that it is watertight before installing tile or setting materials over it.

3.6 INSTALLATION OF CRACK ISOLATION MEMBRANES

A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.

B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.7 ADJUSTING AND CLEANING

A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.

B. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
   1. Remove grout residue from tile as soon as possible.
   2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3.8 PROTECTION

A. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

B. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

3.9 INTERIOR TILE INSTALLATION SCHEDULE

A. Interior Floor Installations, Concrete Subfloor:
   1. Tile Installation F122: Thin-set mortar on waterproof membrane; TCA F122.
      a. Tile Type: CT-1.
      b. Thin-Set Mortar: Latex-portland cement mortar.
      c. Grout: Polymer-modified sanded grout.
   2. Tile Installation TR712-20: Tile-setting epoxy mortar; TCA TR712-20.
      a. Tile Type: CT-1.
      b. Mortar: Water-cleanable, epoxy mortar, TCA TR711-20.
      c. Grout: Water-cleanable, epoxy grout.

B. Interior Wall Installations, Wood or Metal Studs:
   1. Tile Installation W244: Thin-set mortar on cementitious backer units or fiber cement underlayment, over cleavage membrane in shower rooms; TCA W244.
      a. Tile Type: CT-1 and CT-2.
      b. Thin-Set Mortar: Latex-portland cement mortar.
      c. Grout: Standard unsanded cement grout.
   2. Tile Installation TR713-20: Tile over tile, TCA TR713-20.
      a. Tile Type: CT-1 and CT-2.
      b. Mortar: Water-cleanable, epoxy mortar, TCA TR711-20.
      c. Grout: Water-cleanable, epoxy grout.

END OF SECTION 093013

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for ceilings.

B. Related Requirements:
1. Section 079200 “Joint Sealants” for acoustical sealant.
2. Section 092900 “Gypsum Board.”
3. Division 23 Sections for Mechanical Work.
4. Division 26 Sections for Electrical Work.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):
1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
7. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
9. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
10. ASTM E 1264 Classification for Acoustical Ceiling Products.
11. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
12. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
13. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material.

B. ASHRAE Standard 62.1-2004, “Ventilation for Acceptable Indoor Air Quality.”

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Initial Selection: For components with factory-applied color finishes.

C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
1. Acoustical Panel: Set of 6-inch-square Samples of each type, color, pattern, and texture.
2. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch-long Samples of each type, finish, and color.

1.6 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Suspended ceiling components.
2. Structural members to which suspension systems will be attached.
3. Size and location of initial access modules for acoustical panels.
4. Items penetrating finished ceiling including the following:
   a. Lighting fixtures.
   b. Diffusers.
   c. Grilles.
   d. Speakers.
   e. Sprinklers.
   f. Access panels.
   g. Perimeter moldings.
   h. Perimeter moldings.
5. Minimum Drawing Scale: 1/8 inch = 1 foot.

B. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.

C. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Acoustical Ceiling Panels: Full-size panels equal to 5 percent of quantity installed.
2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

1.9 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockup of typical ceiling area in one room.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Installer Qualifications: Installer should be experienced in performing work of this Section and should have specialized in installation work similar to that required for this project required by manufacturer.

C. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.11 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

B. All ceiling products and suspension systems must be installed and maintained in accordance with manufacturer's written installation instructions for that product in effect at the time of installation and best industry practice.
1. Prior to installation, the ceiling product must be kept clean and dry, in an environment that is between 32ºF (0ºC) and 120ºF (49ºC) and not subject to abnormal conditions. Abnormal conditions include exposure to chemical fumes, vibrations, moisture from conditions such as building leaks or condensation, excessive humidity, or excessive dirt or dust buildup.
2. The ceilings must be maintained to avoid excessive dirt or dust buildup that would provide a medium for microbial growth on ceiling panels. Microbial protection does not extend beyond the treated surface as received from the factory and does not protection other materials that contact the treated surface such as supported insulation materials.
3. Building areas to receive ceilings shall be free of construction dust and debris.

1.12 COORDINATION

A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.13 WARRANTY

A. Acoustical Panel: Manufacturer's standard form in which manufacturer agrees to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:
   1. Acoustical Panels: Sagging and warping as a result of defects in materials or factory workmanship.
   2. Grid System: Rusting and manufacturer's defects.
   3. Acoustical Panels designed as inherently resistive to the growth of micro-organisms installed with manufacturer's suspension systems: Visible sag and will resist the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

B. Warranty Period:
   1. Acoustical Panels: Ten (10) years from date of Substantial Completion.
   2. Grid: Ten (10) years from date of Substantial Completion.
   3. Acoustical Panels and Grid Systems supplied by one source manufacturer: Thirty (30) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASTM E 80.

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
   2. Smoke-Developed Index: 50 or less.

C. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ACOUSTICAL PANELS, GENERAL

A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
   1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface according to ASTM E 795.

B. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
   1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

2.3 ACOUSTICAL PANELS (ACT TYPE 1)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Ultima, 1911 as manufactured by Armstrong World Industries or comparable product by one of the following:
1. CertainTeed Corp.
2. Chicago Metallic Corporation.
3. Tectum Inc.
4. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Surface Texture: Fine

C. Composition: Mineral fiber.

D. Color: White.

E. LR: Not less than 0.90, as tested in accordance with ASTM E 1477.

F. NRC: Not less than 0.70, as tested in accordance with ASTM C 423; Classified with UL label on product carton.

G. CAC: Not less than 35, as tested in accordance with ASTM C 1414; Classified with UL label on product carton.

H. Edge/Joint Detail: Beveled Tegular for interface with Prelude XL 15/16" Exposed Tee.

I. Thickness: 3/4 inch (19 mm).

J. Modular Size: 24 by 24 inches (610 by 610 mm).

K. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality."

L. Flame Spread: ASTM D 1264; Class A (UL).

M. Dimensional Stability: HumiGuard Plus – Temperature is between 32ºF (0ºC) and 120ºF (49ºC). It is not necessary for the area to be enclosed or for HVAC to be functioning. All wet work (plastering, concrete, etc.) much be complete and dry.

N. Antimicrobial Protection: BioBlock Plus – Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

O. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.4 ACOUSTICAL PANELS (ACT TYPE 2)

A. Basis-of-Design Product: Subject to compliance with requirements, provide Fine Fissured Ceramaguard, 605 as manufactured by Armstrong World Industries or comparable product by one of the following:
1. CertainTeed Corp.
2. Chicago Metallic Corporation.
3. Tectum Inc.
4. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Surface Texture: Medium

C. Composition: Mineral fiber.

D. Color: White.

E. LR: Not less than 0.88, as tested in accordance with ASTM E 1477.

F. CAC: Not less than 40, as tested in accordance with ASTM C 1414; Classified with UL label on product carton.

G. Edge/Joint Detail: Square Lay-in for interface with Prelude XL 15/16" Exposed Tee.

H. Thickness: 5/8 inch (15 mm).

I. Modular Size: 24 by 48 inches (610 by 1220 mm).

J. Emissions Testing: Section 01350 Protocol, < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality."

K. Flame Spread: ASTM D 1264; Fire Resistive.

L. Dimensional Stability: HumiGuard Max – Temperature is between 32ºF (0ºC) and 120ºF (49ºC). It is not necessary for the area to be enclosed or for HVAC to be functioning.

M. Antimicrobial Protection: Inherent – Resists the growth of mold/mildew and bacterial growth.

N. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

2.5 METAL SUSPENSION SYSTEMS, GENERAL

A. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.
   1. High-Humidity Finish: Comply with ASTM C 635/C 635M requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.

B. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

C. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
   1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
   2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 12 gauge.

D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.6 METAL SUSPENSION SYSTEM - 15/16" GRID

A. Basis-of-Design Product: Subject to compliance with requirements, provide Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc. or comparable product by one of the following:
   1. CertainTeed Corp.
   2. Chicago Metallic Corporation.
   3. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized (galvanized steel, aluminum, or stainless steel) as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flanged design. Exposed surfaces chemically cleansed, capping pre-finished galvanized steel (aluminum or stainless steel) in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).
   1. Structural Classification: ASTM C 635 HD.
   2. Color: White.

C. Accessories: 12-foot hemmed angle molding.

2.7 ACOUSTICAL SEALANT

A. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
   1. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Suspend ceiling hangers from building's structural members and as follows:
   1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
   2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
   3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
   4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
   5. When framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
   6. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member. Install hanger wires plumb and straight.
   7. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of three tight turns in accordance with ASTM C636/C636M.
   1. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
   1. Miter corners where wall moldings intersect or install corner caps.
   2. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.

E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
   1. Arrange directionally patterned acoustical panels as follows:
      a. As indicated on reflected ceiling plans.
      b. Install panels with pattern running in one direction parallel to long axis of space.
   2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
   3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet non-cumulative.

B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

C. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
1. Periodic inspection during the installation of suspended ceiling grids according to ASCE/SEI 7.

3.5 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513.13 - RESILIENT RUBBER WALL BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.

1.2 SUMMARY

A. Section Includes:
   1. Resilient base.
   2. Resilient molding accessories.

B. Related Sections:
   1. Section 096519 “Resilient Tile Flooring” for vinyl composition floor tile.
   2. Section 096536 “Static-Controlled Resilient Flooring” for static-control, vinyl composition floor tile.
   3. Section 096813 "Tile Carpeting" for carpet tile.

1.3 SUBMITTALS

A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions ("Burke Wall Base Installation Instructions").

B. Samples for Initial Selection: For each type of product indicated.

C. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches long.

D. Product Schedule: For resilient base and accessory products.
   1. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.5 QUALITY ASSURANCE

A. Select an installer who is competent in the installation of the manufacturer’s product.

B. Where required, provide wall base material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:
   1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I.
   2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

C. References:
1. ASTM D2240 Standard Test Method for Rubber Property – Durometer Hardness.
2. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
3. ASTM-1861 Type TP, Group 2 “Standard Specification Resilient Rubber Wall Base”.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.7 FIELD CONDITIONS

A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

B. Store materials in a clean, dry, enclosed space off the ground, and protected from the weather and from extremes of heat and cold. Protect adhesives from freezing. Store wallbase, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

C. Maintain a minimum temperature in the spaces to receive the wall base and accessories of 65ºF (18ºC) and a maximum temperature of 85ºF (29ºC) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55ºF (13ºC) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances.

D. Install wall base and accessories after the other finishing operations, including painting, have been completed.
1. Close spaces to traffic during the installation of the wall base.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 MANUFACTURER

A. Basis of Design: Subject to Compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
1. Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604, www.armstrongflooring.com/commercial.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:

1. Refer to Division 1 Section “Product Requirements” for consideration for consideration of an unnamed product by one of the other comparable manufacturers.

2.3 RESILIENT RUBBER WALL BASE MATERIALS

A. Top Set Wall Base: Provide 1/8 in. thick, 4 in. high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style B – Cove.
   1. Color: As selected by the Owner’s Representative from manufacturer’s full range of colors.

2.4 ACCESSORIES

A. Provide manufacturer’s standard wall base pre-mitered inside and outside corners.

2.5 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.
   1. Provide transition/reducing strips tapered to meet abutting materials.
   2. Provide threshold of thickness and width as shown on the drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
   1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Proceed with installation only after unsatisfactory conditions have been corrected.
   1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with leveling compound as recommended by the manufacturer.

1. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

C. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations. Avoid organic solvents.

D. Do not install resilient products until they are the same temperature as the space where they are to be installed.
1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 WALL BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

END OF SECTION 096513.13

SECTION 096519 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Vinyl composition floor tile.

B. Related Requirements:
   1. Section 033000 “Cast-In-Place Concrete” for floor slab preparation.

1.3 REFERENCES

A. ASTM International:
   1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
   2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
   3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
   4. ASTM F 1066 Standard Specification for Vinyl Composition Tile
   5. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
   6. ASTM F 1861 Standard Specification for Resilient Wall Base
   7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
   8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

B. National Fire Protection Association (NFPA):
   1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
   2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For each type of resilient floor tile.

1. Include floor tile layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
2. Show details of special patterns.

C. Samples for Initial Selection: For each type of floor tile indicated.

D. Samples for Verification: Full-size units of each color and pattern of floor tile required.

E. Product Schedule: For floor tile.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

C. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.11 FIELD CONDITIONS

A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65ºF (18ºC) and a maximum temperature of 85ºF (29ºC) for at least 48 hours before, during, and for not less than 48 hours after installation.

1. Thereafter, maintain a minimum temperature of 55ºF (13ºC) in areas where work is completed.

B. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances.

C. Close spaces to traffic during floor tile installation.
1. Close spaces to traffic for 48 hours after floor tile installation.

D. Install floor tile after other finishing operations, including painting, have been completed.
1. The areas to receive flooring materials shall be clean and fully enclosed.

1.12 WARRANTY

A. Limited Warranty: Manufacturer agrees to repair or replace rubber floor tile that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Five **[5]** years from date of Substantial Completion.
2. For the Limited Warranty to be valid, this product is required to be installed using the appropriate manufacturer's Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

B. Special Warranty: Manufacturer agrees to repair or replace system (subfloor preparation products, adhesive, and floor covering) that fails within the warranty period.
1. Warranty Period: Ten **[10]** years in addition to Resilient Flooring Limited Warranty.
2. The installation of the flooring product along with the recommended flooring adhesive, as well as any one of the subfloor preparation products approved by the manufacturer, shall provide 10 additional years of limited warranty coverage. Any subfloor preparation product needed for an installation must be an approved product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire Performance Characteristics: Provide resilient vinyl composition tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less

2.2 MANUFACTURER

A. Basis of Design: Subject to Compliance with requirements, resilient tile flooring, wall base, adhesives and subfloor preparation products and accessories that may be incorporated into the Work include, but are not limited to, the following:
1. Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604, www.armstrongflooring.com/commercial.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:

1. Mannington Commercial.
2. Tarkett, Inc.
3. Refer to Division 1 Section “Product Requirements” for consideration for consideration of an unnamed product by one of the other comparable manufacturers.

2.3 VINYL COMPOSITION FLOOR TILE

A. Provide Vinyl Composition Tile: Premium Excelon Stonetex, including feature tile and strips.
   1. Description: Tile composed of polyvinyl chloride resin, plasticizers, fillers, stabilizers and pigments with colors and texture dispersed uniformly throughout its entire thickness.
   2. Tile Standard: ASTM F 1066, “Standard Specification for Vinyl Composition Floor Tile", Class 2, through-pattern
   3. Pattern and Color: as selected by Owner from manufacturer’s full range.
   4. Size: 12 in. x 12 in.
   5. Thickness:1/8"/0.125 in.

2.4 WALL BASE MATERIALS

A. Top Set Wall Base: Provide 1/8 in. thick, 4 in. high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style B – Cove.

B. Alternate at Ceramic Tile Flooring: Provide 1/4 in. thick, 4.5 in. high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style A – Straight

2.5 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.

B. Primer: For priming porous substrates to aid in adhesive bond strength and reducing subfloor porosity, provide S-454 Prime Strong™ acrylic primer for porous substrates. For non-porous substrates, provide S-455 Prime Strong™ acrylic primer for non-porous substrates.

C. Moisture Barrier: For creating a moisture barrier, provide S-452 Seal Strong™ two-part moisture mitigation system.

D. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.

E. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

2.6 ACCESSORIES

A. Provide transition/reducing strips tapered to meet abutting materials.

B. Provide threshold of thickness and width as shown on the drawings.

C. Provide resilient edge strips where required, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.

D. Provide metal edge strips where required, of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage.
   1. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
   1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
   3. Slab Porosity and Adhesion Testing: Perform tests recommended by manufacturer, following each individual adhesive manufacturer’s application instructions for use on non-porous substrates if applicable.
   4. Moisture Testing: Perform tests so that each test area does not exceed **1000 sq. ft.**, and perform no fewer than **three** tests in each installation area and with test areas evenly spaced in installation areas.
      a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
      b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install floor tiles until materials are the same temperature as space where they are to be installed.
   1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
   1. Lay tiles in pattern indicated.

C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas.
   1. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 INSTALLATION OF ACCESSORIES

A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped.
   1. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.

B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

D. Apply metal edge strips where required for flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Clean and buff floor to sheen using manufacturer's non-chemical mechanical buffing / burnishing system.
1. Install number of coats in accordance with manufacturer’s recommendations.

E. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 096536 – STATIC-CONTROL RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Static-control, vinyl composition floor tile.

B. Related Requirements:
   1. Section 096513 "Resilient Base and Accessories" for resilient base, reducer strips, and other accessories installed with static-control resilient flooring.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
   1. Review methods and procedures related to static-control resilient flooring including, but not limited to, the following:
      a. Examination and preparation of substrates to receive static-control resilient flooring.
      b. Installation techniques required for specified products.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For each type of static-control resilient flooring. Include floor-covering layouts, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
   1. Show details of special patterns.
   2. Show grounding locations of grounding strips and connections.

C. Samples: For each type of static-control resilient flooring and in each color, pattern, and texture required, in manufacturer's standard size, but not less than 6 by 9 inches.

D. Product Schedule: For static-control resilient flooring. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For static-control resilient flooring, for tests performed by a qualified testing agency.

C. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of static-control resilient flooring to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Floor Tile: Furnish one box for every 50 boxes, or fraction thereof, of each type, color, and pattern of floor tile installed.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in installation techniques required by manufacturer for specified static-control resilient flooring.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Store static-control resilient flooring and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended in writing by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).
   1. Floor Tile: Store on flat surfaces.
   2. Sheet Floor Covering: Store rolls upright.

1.10 PROJECT CONDITIONS

A. Maintain ambient temperatures in spaces to receive static-control resilient flooring within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 85 deg F (29 deg C), during the following time periods:
   1. 48 hours before installation.
   2. During installation.
   3. 48 hours after installation.

B. Until Substantial Completion, maintain ambient temperatures in installation areas within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Close spaces to traffic during static-control resilient flooring installation.

D. Close spaces to traffic for 72 hours after static-control resilient flooring installation.

E. Install static-control resilient flooring after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 STATIC-CONTROL, VINYL COMPOSITION FLOOR TILE (SDT)

A. Basis of Design: Subject to Compliance with requirements, resilient tile flooring, wall base, adhesives and subfloor preparation products and accessories that may be incorporated into the Work include, but are not limited to, the following:
   1. Excelon SDT by Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604, www.armstrongflooring.com/commercial.

B. Source Limitations: Obtain floor tile from single source from single manufacturer.

C. Static-Control Properties: As determined by testing identical products in accordance with test method indicated by an independent testing and inspecting agency.
   1. Electrical Resistance:
      a. Material: Point-to-point and point-to-ground resistances between 1,000,000 ohms and 1,000,000,000 ohms when tested in accordance with ASTM F150 or ESD STM7.1.
      b. Material in Combination with a Person: Average resistance of 448,000,000 ohms when tested in accordance with ESD STM97.1.
   2. Static Generation: When tested in accordance with ESD STM97.2, an average of less than 30 V when tested at 12 percent relative humidity with static-control footwear.
   3. Static Decay: 1000 to 100 V in maximum of 0.2 seconds at 12 percent relative humidity when tested in accordance with manufacturer's standard test protocol using an operator wearing static-control footwear and a static decay meter.

D. Critical Radiant Flux: 0.45 W/sq. cm or greater in accordance with ASTM E648 or NFPA 253.

E. Construction: ASTM F1066 Class 2, vinyl composition floor tile, through pattern.

F. Thickness: 1/8 inch.

G. Size: 12 by 12 inches.

H. Colors and Patterns: As selected by Architect from manufacturer's full range.

2.2 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified portland cement or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Static-Control Adhesive: Provided or approved by manufacturer; type that maintains electrical continuity of floor-covering system to ground connection.

C. Grounding Strips: Provided or approved by manufacturer; type and size that maintains electrical continuity of floor-covering system to ground connection.

D. Floor Polish: Provide protective, static-control liquid floor polish products recommended in writing by floor-covering manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for conditions affecting performance of the Work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with installation or static-control characteristics of floor coverings.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates in accordance with manufacturer's written instructions to ensure successful installation of static-control resilient flooring and electrical continuity of floor-covering systems.

B. Concrete Substrates: Prepare in accordance with ASTM F710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
   2. Remove substrate coatings and other substances that are incompatible with floor-covering adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
   3. Slab Porosity and Adhesion Testing: Perform tests recommended by manufacturer, following each individual adhesive manufacturer’s application instructions for use on non-porous substrates if applicable.
   4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
      a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
      b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install static-control resilient flooring until it is same temperature as space where it is to be installed.
   1. Move static-control resilient flooring and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

E. Sweep and vacuum substrates to be covered by static-control resilient flooring immediately before installation.

3.3 INSTALLATION, GENERAL

A. Install static-control resilient flooring in accordance with manufacturer's written instructions.

B. Extend grounding strips beyond perimeter of static-control resilient floor-covering surfaces to ground connections.

1. For adhesively installed flooring, embed grounding strips in static-control adhesive.

C. Scribe, cut, and fit static-control resilient flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
   1. Extend static-control resilient flooring below built-in items and permanent, but movable, items that allow for a flexible layout where indicated on Drawings.

D. Extend static-control resilient flooring into toe spaces, door reveals, closets, and similar openings.

E. Extend static-control resilient flooring to center of door openings where flooring or color transitions occur.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on static-control resilient flooring as marked on substrates. Use chalk or other nonpermanent, nonstaining marking device.

G. Install static-control resilient flooring on covers for telephone and electrical ducts, and similar items in installation areas. Maintain overall continuity of color and pattern with pieces of static-control resilient flooring installed on covers. Tightly adhere static-control resilient flooring edges to substrates that abut covers and to cover perimeters.

H. Adhesive Installation: Adhere static-control resilient flooring to substrates using a full spread of static-control adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 INSTALLATION OF FLOOR TILE

A. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so floor tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half floor tile at perimeter.
   1. Lay floor tiles in pattern indicated on Drawings.

B. Match floor tiles for color and pattern by selecting floor tiles from cartons in same sequence as manufactured and packaged if so numbered. Discard broken, cracked, chipped, or deformed floor tiles.
   1. Lay vinyl composition floor tiles with grain running in one direction.

C. In each space where conductive, solid vinyl floor tile is installed, install maintenance floor tile identifying conductive floor tile in locations approved by Architect.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of static-control resilient flooring.

B. Perform the following operations immediately after completing static-control resilient flooring:
   1. Remove static-control adhesive from exposed surfaces.
   2. Remove dirt and blemishes from exposed surfaces.
   3. Sweep and vacuum surfaces thoroughly.
   4. Damp-mop surfaces to remove marks and soil.

C. Protect static-control resilient flooring from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
   1. Do not wax static-control resilient flooring.

2. If recommended in writing by manufacturer, apply protective static-control floor polish formulated to maintain or enhance floor covering's electrical properties. Before polishing, do the following:
   a. Ensure that static-control resilient flooring surfaces are free from soil, static-control adhesive, and surface blemishes.
   b. Verify that both floor polish and its application method are approved by manufacturer and that floor polish will not leave an insulating film that reduces static-control resilient flooring's effectiveness for static control.

D. Cover static-control resilient flooring and protect from rolling loads until Substantial Completion.

END OF SECTION 096536

SECTION 096813 - TILE CARPETING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes modular, tufted carpet tile.

B. Related Requirements:
1. Section 012300 “Alternates” for carpet tile replacement included under alternates.
2. Section 024119 “Selective Demolition” for salvage of existing carpet tiles.
1. Section 033000 “Cast-In-Place Concrete” for floor slab preparation.
2. Section 096513.13 "Resilient Base and Accessories" for resilient wall base and accessories installed with carpet tile.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1. Review methods and procedures related to carpet tile installation including, but not limited to, the following:
a. Review delivery, storage, and handling procedures.
b. Review ambient conditions and ventilation procedures.
c. Review subfloor preparation procedures.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. Include manufacturer's written data on physical characteristics, durability, and fade resistance.
2. Include installation recommendations for each type of substrate.

B. Shop Drawings: Show the following:
1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
2. Carpet tile type, color, and dye lot.
3. Type of subfloor.
4. Type and pattern of installation.
5. Pattern type, location, and direction.
6. Pile direction.
7. Type, color, and location of insets and borders.
8. Type, color, and location of edge, transition, and other accessory strips.
9. Transition details to other flooring materials.

C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1. Carpet Tile: Full-size Sample.
2. Exposed Edge, Transition, and Other Accessory Stripping: 12-inch- long Samples.

D. Product Schedule: For carpet tile. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Test Reports: For carpet tile, for tests performed by a qualified testing agency.

C. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.

B. Fire-Test-Response Ratings: Where indicated, provide carpet tile identical to those of assemblies tested for fire response according to NFPA 253 by a qualified testing agency.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Comply with CRI's "CRI Carpet Installation Standard."

1.10 FIELD CONDITIONS

A. Comply with CRI's "CRI Carpet Installation Standard" for temperature, humidity, and ventilation limitations.

B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at levels planned for building occupants during the remainder of the construction period.

C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.11 WARRANTY

A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
   1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
   2. Failures include, but are not limited to, more than 10 percent edge raveling, snags, runs, dimensional stability, excess static discharge, loss of tuft bind strength, loss of face fiber, and delamination.

B. Warranty Period: 15 years from date of Substantial Completion.
   1. The manufacturer of the submitted flooring material and associated adhesive shall convey the standard product warranties within the guidelines of this Specification.

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Basis-of-Design Product: Subject to compliance with requirements, provide Authentic as manufactured by Shaw Industries or comparable product by one of the following:
   1. Milliken Floor Covering.
   2. Lees.
   3. InterfaceFLOR, Inc.

B. Color: As selected by Owner’s Representative from manufacturer's full range.

C. Pattern: As selected by Owner’s Representative from manufacturer's full range.

D. Fiber Content: 100 percent nylon

E. Dye Method: 100% solution dye.

F. Pile Characteristic: Multi-level Pattern Loop pile.

G. Pile Thickness: .102 inches minimum for finished carpet tile.

H. Stitches: 10 per inch minimum.

I. Gage: 1/10 minimum.

J. Surface Pile Weight: 15 oz./sq. yd. minimum.

K. Primary Backing/Backcoating: Manufacturer's standard synthetic materials.

L. Backing System: Ecoworx.

M. Size: 24 by 24 inches.

N. Applied Soil-Resistance Treatment: Manufacturer's standard material.

O. Antimicrobial Treatment: Manufacturer's standard material.
1. Passes (AATCC 175).

P. Performance Characteristics: As follows:
1. Critical Radiant Flux Classification: Not less than 0.45 W/sq. cm.
2. Dry Breaking Strength: Not less than 100 lbf according to ASTM D 2646.
3. Tuft Bind: Not less than 8 lb minimum according to ASTM D 1335.
4. Dimensional Tolerance: Within 1/32 inch of specified size dimensions, as determined by physical measurement.
5. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
6. Resistance to Insects: Comply with AATCC 24.
7. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
8. Colorfastness to Light: Not less than 4 after 60 AFU (AATCC fading units) according to AATCC 16, Option E.
9. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.
10. Electrostatic Propensity: Less than 3.0 kV according to AATCC 134.

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

B. Carpet Tile Connectors: Clear 3 by 3 inch polyester squares with colored print, supplied on white polyester release liner. Available in rolls or sheets.
1. Chemical Composition: Compounded acrylic adhesive, applied to PET polyester backing with PET polyester release liner.

C. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance.

B. Examine carpet tile for type, color, pattern, and potential defects.

C. Concrete Slabs: Verify that finishes comply with requirements specified in Section 033020 “Concrete Slab-on-Grade” and that surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with CRI's "Carpet Installation Standards" and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.

C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.

D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.

E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.3 INSTALLATION

A. General: Comply with CRI's "CRI Carpet Installation Standard," Section 18, "Modular Carpet" and with carpet tile manufacturer's written installation instructions.

B. Installation Method: As recommended in writing by carpet tile manufacturer.

C. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.

D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.

G. Install pattern parallel to walls and borders.

H. Access Flooring: Stagger joints of carpet tiles so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

3.4 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing carpet tile:
   1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
   2. Remove yarns that protrude from carpet tile surface.
   3. Vacuum carpet tile using commercial machine with face-beater element.

B. Protect installed carpet tile to comply with CRI's "Carpet Installation Standard," Section 20, "Protecting Indoor Installations."

C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
   1. Galvanized metal doors and frames.

B. Related Requirements:
   1. Section 081113 “Metal Doors and Frames” for factory primed hollow metal work.
   2. Section 090190.52 "Maintenance Repainting" for repainting of existing interior metal window and cabinet unit finishes.
   3. Section 099123 “Interior Painting” for surface preparation and the application of paint systems on interior substrates.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
   1. Include color designations.

1.5 CLOSEOUT SUBMITTALS

A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Paint: **1 gal.** of each material and color applied.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experience installer who has completed painting installations similar in material, design and extent to that indicated for Project that has resulted in construction with a record of successful in-service performance.

B. Source Limitations for Siding and Accessories: Obtain from one source with resources to provide products of consistent quality in appearance and physical properties with delaying the Work.

C. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Final approval of color selections will be based on mockups.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.9 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product Manufacturer: Subject to compliance with requirements, provide Sherwin-Williams Company products or comparable products from one of the following:
1. Benjamin Moore & Co. (Benjamin Moore).
2. Kelly-Moore Paint Co. (Kelly-Moore).
3. PPG Industries, Inc. (Pittsburgh Paints).

B. Products: Subject to compliance with requirements, provide products listed in other Part 3 articles for the paint category indicated or a comparable product by another manufacturer.

2.2 PAINT, GENERAL

A. Material Compatibility:
1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

B. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Concrete: 12 percent.
2. Fiber-Cement Board: 12 percent.

3. Masonry (Clay and CMUs): 12 percent.
4. Wood: 15 percent.
5. Portland Cement Plaster: 12 percent.
6. Gypsum Board: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer. but not less than the following:
1. SSPC-SP 2.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Aluminum Substrates: Remove loose surface oxidation.

J. Wood Substrates:
1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
   1. Use applicators and techniques suited for paint and substrate indicated.
   2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
   3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
   4. Paint entire exposed surface of siding and trims.
   5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
   6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

D. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
   1. Paint the following work where exposed to view:
      a. Uninsulated metal piping.
      b. Uninsulated plastic piping.
      c. Pipe hangers and supports.
      d. Metal conduit.
      e. Plastic conduit.
      f. Equipment, devices and tanks that do not have factory-applied final finishes.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
   1. Contractor shall touch up and restore painted surfaces damaged by testing.
   2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

A. Ferrous metal, Galvanized-metal, and aluminum substrates:
   1. Water-Based Light Industrial Coating System:
      a. Prime Coat: Primer, water-based, anti-corrosive for metal: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils wet, 2.0 to 4.0 mils dry.
      b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
      c. Topcoat: Light industrial coating, exterior, water based, semi-gloss: S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils dry, per coat.

END OF SECTION 099113

SECTION 099123 – INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates.
   1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.
   1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish, unless noted otherwise.

C. Do not paint pre-finished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
   1. Pre-finished items include the following factory-finished components:
      a. Casework.
      b. Wood doors
      c. Aluminum frames, framed entrances and storefronts and pass windows.
      d. Fiberglass composite windows
      e. Metal wall and ceiling panels.
      f. Finished mechanical and electrical equipment.
      g. Light fixtures.
   2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
      a. Foundations.
      b. Furred areas.
      c. Ceiling plenums.
      d. Pipe spaces.
      e. Duct shafts.
   3. Finished metal surfaces include the following:
      a. Anodized aluminum.
      b. Stainless steel.
      c. Chromium plate.
      d. Copper and copper alloys.
      e. Bronze and brass.
   4. Operating parts include moving parts of operating equipment and the following:
      a. Valve and damper operators.
      b. Linkages.
      c. Sensing devices.
      d. Motor and fan shafts.
   5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Requirements:
1. Section 081113 "Hollow Metal Doors and Frames" for factory priming steel doors and frames.
2. Section 090190.52 "Maintenance Repainting" for repainting of existing metal window and cabinet unit finishes.
3. Section 092400 "Cement Plastering" for surface preparation of existing plaster finishes.
4. Section 092900 "Gypsum Board" for surface preparation of gypsum board.
5. Division 21, 22 and 23 Sections for painting fire protection, plumbing and mechanical components by other trades.
6. Division 26 Sections for painting electrical and fire alarm components.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: For each product indicated, include the following:
1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Include color designations.

D. Qualification Data: For Applicator.

1.5 CLOSEOUT SUBMITTALS

A. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Paint: **1 gal.** of each material and color applied.

1.7 QUALITY ASSURANCE

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain primers for each coating system from the same manufacturer as the finish coats.

C. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Final approval of color selections will be based on mockups.
   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
   1. Product name or title of material.
   2. Product description (generic classification or binder type).
   3. Manufacturer's stock number and date of manufacture.
   4. Contents by volume, for pigment and vehicle constituents.
   5. Thinning instructions.
   6. Application instructions.
   7. Color name and number.
   8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F.
   1. Maintain containers in clean condition, free of foreign materials and residue.
   2. Remove rags and waste from storage areas daily.

1.9 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Benjamin Moore & Co. (Benjamin Moore).
   2. Kelly-Moore Paint Co. (Kelly-Moore).
   3. PPG Industries, Inc. (Pittsburgh Paints).
   4. Sherwin-Williams Co. (Sherwin-Williams).

B. Products: Subject to compliance with requirements, provide product, or a comparable product by another manufacturer.
   1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

2.2 PAINT, GENERAL

A. Material Compatibility:
   1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
   2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: As selected by **Owner's Project Representative** from manufacturer's full range.

2.3 PRIMERS

A. Interior/Exterior Latex Block Filler: Water-based, high-solids, emulsion coating formulated to bridge and fill porous surfaces of exterior concrete masonry units in preparation for specified subsequent coatings.

B. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
   1. Benjamin Moore; Moorcraft Super Spec Latex Enamel Undercoater & Primer Sealer No. 253: Applied at a dry film thickness of not less than 1.2 mils (0.030 mm).
   2. Kelly-Moore; 971 Acry-Prime Interior Latex Primer/Sealer: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
   3. Pittsburgh Paints; 6-2 SpeedHide Interior Quick-Drying Latex Sealer: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
   4. Sherwin-Williams; S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry.

C. Interior Wood Primer for Acrylic-Enamel and Semi-gloss Alkyd-Enamel Finishes: Factory-formulated alkyd- or acrylic-latex-based interior wood primer.
   1. Benjamin Moore; Fresh Start Alkyd Primer Sealer No. C024: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).

2. Kelly-Moore; 975 Acry Plex Interior Latex Enamel Undercoat: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm). Pittsburgh Paints; 6-855 SpeedHide Latex Enamel Undercoater: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
3. Sherwin-Williams; S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils wet, 1.4 mils dry..

D. Interior Ferrous-Metal Primer: Factory-formulated quick-drying rust-inhibitive alkyd-based metal primer.
1. Benjamin Moore; Super Spec HP Alkyd Metal Primer P06: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
2. Kelly-Moore; 1711 Kel-Guard Alkyd White Rust Inhibitive Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
3. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
4. Sherwin-Williams; Kem Kromik Universal Metal Primer B50NZ6/B50WZ1: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

E. Interior Zinc-Coated Metal Primer: Factory-formulated galvanized metal primer.
1. Benjamin Moore; Super Spec HP Acrylic Metal Primer P04: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
2. Kelly-Moore; 1722 Kel-Guard Acrylic Galvanized Iron Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
3. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).
4. Sherwin-Williams; Galvite HS B50WZ30: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

2.4 INTERIOR FINISH COATS

A. Interior Flat Acrylic Paint: Factory-formulated flat acrylic-emulsion latex paint for interior application.
1. Benjamin Moore; Moorecraft Super Spec Latex Flat No. 275: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
2. Kelly-Moore; 450 Pro-Wall Interior Flat Latex Wall Paint: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
3. Pittsburgh Paints; 6-70 Line SpeedHide Interior Wall Flat-Latex Paint: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
4. Sherwin-Williams; ProMar 200 Interior Latex Flat Wall Paint B30-2600 Series: Applied at a dry film thickness of not less than 1.6 mils (0.036 mm).

B. Interior Low-Luster Acrylic Enamel: Factory-formulated eggshell acrylic-latex interior enamel.
1. Benjamin Moore; Moorcraft Super Spec Latex Eggshell Enamel No. 274: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
2. Kelly-Moore; 1610 Sat-N-Sheen Interior Latex Low Sheen Wall and Trim Finish: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
3. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils (0.032 mm).
4. Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20-2600 Series: Applied at a dry film thickness of not less than 1.7 mils.

C. Interior Semi-gloss Acrylic Enamel: Factory-formulated semi-gloss acrylic-latex enamel for interior application.
1. Benjamin Moore; Moorcraft Super Spec Latex Semi-Gloss Enamel No. 276: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).

2. Kelly-Moore; 1649 Acrylic-Latex Semi-Gloss Enamel: Applied at a dry film thickness of not less than 1.7 mils.
3. Pittsburgh Paints; 6-500 Series SpeedHide Interior Semi-Gloss Latex: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
4. Sherwin-Williams; ProMar 200 Interior Latex Semi-Gloss Enamel B31-2600 Series: Applied at a dry film thickness of not less than 1.6 mils.

D. Interior Alkyd Gloss: over properly prepared ferrous or galvanized metal.
1. Benjamin Moore: Super Spec HP Urethane Alkyd Gloss Enamel No. P22: Applied at a dry film thickness of not less than 1.8 mils.
2. Sherwin-Williams: Pro Industrial Acrylic Glass Coating B66-660 Series: Applied at a dry film thickness of not less 2.5 mils.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
1. Concrete: 12 percent.
2. Fiber-Cement Board: 12 percent.
3. Masonry (Clay and CMUs): 12 percent.
4. Wood: 15 percent.
5. Gypsum Board: 12 percent.
6. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Plaster Substrates: Verify that plaster is fully cured.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

G. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Aluminum Substrates: Remove loose surface oxidation.

J. Wood Substrates:
1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

D. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
   1. Paint the following work where exposed in occupied spaces:
      a. Equipment, including panelboards.
      b. Uninsulated metal piping.
      c. Uninsulated plastic piping.
      d. Pipe hangers and supports.
      e. Metal conduit.
      f. Plastic conduit.
      g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
      h. Other items as directed by Architect.
   2. Paint the following work where exposed in occupied spaces:
      a. Equipment, including panelboards.
      b. Uninsulated metal piping.
      c. Uninsulated plastic piping.
      d. Pipe hangers and supports.
      e. Metal conduit.
      f. Plastic conduit.
      g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
      h. Other items as directed by Architect.
   3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
   1. Contractor shall touch up and restore painted surfaces damaged by testing.
   2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINT SCHEDULE

A. Metal Substrates (Steel, Galvanized Steel):
1. Water-Based Light Industrial Coating System:
a. Prime Coat: Primer, rust-inhibitive, water based:
1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.
b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
c. Topcoat: Light industrial coating, interior, water based, semi-gloss:
1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

B. Wood Substrates: Including exposed wood items not indicated to receive shop-applied finish.
1. Latex System:
a. Prime Coat: Primer sealer, latex, interior:
1) S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry.
b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, eggshell:
1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.

C. Masonry Substrates:
1. Latex System:
a. Block Filler: Interior/exterior latex block filler.
b. Intermediate Coat: Matching topcoat.
c. Topcoat: Interior, latex, institutional low odor/VOC.
1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.
d. Topcoat: Latex, interior, semi-gloss:
1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

D. Gypsum Board and Plaster Substrates:
1. Latex System:
a. Prime Coat: Primer, latex, interior:
1) S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils (0.102 mm) wet, 1.0 mils (0.025 mm) dry.
b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, eggshell:
1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.
d. Topcoat: Latex, interior, semi-gloss:
1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

END OF SECTION 099123

MONTGOMERY COUNTY NY

Made of Something Stronger

DIVISION 10

Specialties

SECTION 101419 - DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Cutout dimensional characters.
   2. Fabricated channel dimensional characters

B. Related Requirements:
   1. Section 265100 "Interior Lighting" for replacement of existing canopy lighting fixtures.

1.3 COORDINATION

A. Furnish templates for placement of electrical service embedded in permanent construction by other installers.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For dimensional letter signs.
   1. Include fabrication and installation details and attachments to other work.
   2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
   3. Show message list, typestyles, graphic elements, and layout for each sign.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
   1. Include representative Samples of available typestyles and graphic symbols.

D. Qualification Data: For Installer.

E. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer of products.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify locations of existing permanent construction by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Deterioration of finishes beyond normal weathering.
      b. Separation or delamination of sheet materials and components.
   2. Warranty Period: **Five [5]** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

B. Thermal Movements: For exterior fabricated channel dimensional characters allow for thermal movements from ambient and surface temperature changes.
   1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 DIMENSIONAL CHARACTERS

A. Cutout Characters: Characters with uniform faces; square-cut, smooth, eased edges; precisely formed lines and profiles; and as follows:
   1. Basis-of-Design Product: Subject to compliance with requirements, provide signs as manufactured by Gemini Incorporated, or comparable product by one of the following:
      a. APCO Graphics, Inc.
      b. A. R. K. Ramos Signage Systems.
      c. ASI Sign Systems, Inc.
      d. Gemini, Inc.
      e. Metallic Arts.
      f. Steel Art Company.
   2. Character Material: Sheet or plate aluminum.
   3. Character Height: As indicated on Drawings.
   4. Thickness: As indicated on Drawings.
   5. Finishes:
      a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities.
   6. Mounting: Projecting studs.
   7. Typeface: As indicated on Drawings.

B. Fabricated Channel Characters: Metal face and side returns, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability and for securing fasteners; and as follows.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide signs as manufactured by Gemini Incorporated, or comparable product by one of the following:

a. APCO Graphics, Inc.
b. A. R. K. Ramos Signage Systems.
c. ASI Sign Systems, Inc.
d. Gemini, Inc.
e. Metallic Arts.
f. Steel Art Company.

2. Character Material: Sheet or plate aluminum.
3. Character Height: As indicated on Drawings.
4. Thickness: As indicated on Drawings.
5. Finishes:
   a. Integral Aluminum Finish: Anodized color as selected by Architect from full range of industry colors and color densities.
6. Mounting: Projecting studs.
7. Typeface: As indicated on Drawings.

2.3 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 VINYL MATERIALS

A. Applied Vinyl: Die-cut characters from vinyl film of nominal thickness of 3 mils with pressure-sensitive adhesive backing, suitable for exterior applications.

B. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.

2.5 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
   1. For Exterior Exposure:
      a. Furnish nonferrous-metal or stainless-steel devices unless otherwise indicated.
   2. Exposed Metal-Fastener Components, General:
      a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
   3. Sign Mounting Fasteners:
      a. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

2.6 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
   1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
   2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
   3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
   4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
   5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
   6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
   7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.

B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.
   1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color unless otherwise indicated.

2.7 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.8 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, Class II, 0.010 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of signage work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF DIMENSIONAL CHARACTERS

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
   1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
   2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
   3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:
   1. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
      a. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.
   2. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
   3. Back Bar and Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position, so that signage is correctly located and aligned.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101419

SECTION 101423 - PANEL SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Regulatory panel signage.
   2. Field-applied, vinyl-character signs.

B. Related Requirements:
   1. Section 015000 "Temporary Facilities and Controls" for temporary Project identification signs and for temporary information and directional signs.
   2. Section 078413 “Penetration Firestopping” for identifying penetration firestopping with preprinted metal or plastic labels.
   3. Section 10142.16 “Room Identification Signage” interior room-identification signs that are directly attached to the building.
   4. Section 101419 – “Dimensional Letter Signage” for fabricated channel dimensional characters attached to building exterior.
   5. Section 220553 "Identification for Plumbing Piping and Equipment" for labels, tags, and nameplates for plumbing systems and equipment.
   6. Section 230553 "Identification for HVAC Piping and Equipment" for labels, tags, and nameplates for HVAC systems and equipment.
   7. Section 260553 "Identification for Electrical Systems” for labels, tags, and nameplates for electrical equipment.
   8. Section 265100 "Interior Lighting" for illuminated, exit sign units.

1.3 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For panel signs.
   1. Include fabrication and installation details and attachments to other work.
   2. Show sign mounting heights, locations of supplementary supports, and accessories.

3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
1. Include representative Samples of available typestyles and graphic symbols.

D. Product Schedule: For panel signs. Use same designations indicated on Drawings or specified.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
a. Deterioration of finishes beyond normal weathering.
b. Deterioration of embedded graphic image.
c. Separation or delamination of sheet materials and components.
2. Warranty Period: **Five [5]** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.
1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

B. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

2.2 PANEL SIGNS

A. Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
1. Solid-Sheet Sign: Aluminum sheet with finish specified in "Surface Finish and Applied Graphics" Subparagraph and as follows:
a. Thickness: Manufacturer's standard for size of sign.
b. Surface-Applied, Flat Graphics: Applied manufacturer’s standard vinyl film, baked enamel or powder coat or paint.

2. Mounting: Manufacturer's standard method for substrates indicated.
3. Surface Finish and Applied Graphics:
   a. Integral Aluminum Finish: Manufacturer's standard in color as indicated or as selected by Architect from manufacturer's full range.
   b. Baked-Enamel or Powder-Coat Finish and Graphics: Manufacturer's standard, in color as indicated or as selected by Architect from manufacturer's full range.
   c. Painted Finish and Graphics: Manufacturer's standard, factory-applied exterior-grade sign paint, in color as indicated or as selected by Architect from manufacturer's full range.
4. Text and Typeface: typeface as indicated by manufacturer's standard designation.
   a. Text/Message: Refer to Regulatory Signage Detail on Drawings.

B. Field-Applied, Vinyl-Character Sign: Pre-spaced characters die cut from 3- to 3.5-mil thick, weather-vinyl film with release liner on the back and carrier film on the front for on-site alignment and application.
1. Wall Sign: Provide at Reception Counter.
   a. Character Style: Match room identification signages.
   b. Character Size: Minimum 9-inch-high.
   c. Color: As selected by Owner’s Representative from manufacturer's full range.
   d. Text/Message: “DEPARTMENT OF SOCIAL SERVICES”
2. Room numbers: Provide at each interior metal door frame head, one side.
   a. Character Size: 1-1/2” high
   b. Color: White
   c. Text/Message: Refer to Room Finish Schedule.

2.3 PANEL-SIGN MATERIALS

A. Aluminum Sheet and Plate: ASTM B209 (ASTM B209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

B. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following unless otherwise indicated:
1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish nonferrous-metal devices unless otherwise indicated.
3. Exposed Metal-Fastener Components, General:
   a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
4. Sign Mounting Fasteners:
   a. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, and installed in predrilled holes.

B. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch (1.14 mm) thick, with adhesive on both sides.

2.5 FABRICATION

A. General: Provide manufacturer's standard signs of configurations indicated.
1. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.

2. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
3. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.

B. Subsurface-Applied Graphics: Apply graphics to back face of clear face-sheet material to produce precisely formed image. Image shall be free of rough edges.

C. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.7 ALUMINUM FINISHES

A. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Install signs so they do not protrude or obstruct according to the accessibility standard.
3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Accessible Signage: Install in locations on walls as indicated on Drawings and according to the accessibility standard.

C. Mounting Methods:
1. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
2. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
3. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

D. Field-Applied, Vinyl-Character Signs: Clean and dry substrate. Align sign characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position.
1. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.

E. Signs Mounted on Glass: Provide opaque sheet matching sign material and finish onto opposite side of glass to conceal back of sign.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423

SECTION 101423.16 – ROOM IDENTIFICATION PANEL SIGNAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes interior room-identification signs that are directly attached to the building.

B. Related Requirements:
1. Section 1013423 "Panel Signage" for regulatory signage.

1.3 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For room-identification signs.
1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
1. Include representative Samples of available typestyles and graphic symbols.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:
1. Full-size Samples, if approved, will be returned to Contractor for use in Project.

E. Product Schedule: For room-identification signs. Use same designations indicated on Drawings or specified.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Deterioration of finishes beyond normal weathering.
      b. Deterioration of embedded graphic image.
      c. Separation or delamination of sheet materials and components.
   2. Warranty Period: **Five [5]** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1 as referenced by the Building Code of New York State.

2.2 ROOM-IDENTIFICATION SIGNS

A. Room-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
   1. Laminated-Sheet Sign: Photopolymer face sheet with raised graphics laminated to phenolic backing sheet to produce composite sheet.
      a. Composite-Sheet Thickness: Manufacturer's standard for size of sign; 0.25 inch.
      b. Color(s): As selected by Owner’s Project Representative from manufacturer's full range.
   2. Sign-Panel Perimeter: Finish edges smooth.
      a. Edge Condition: Bullnosed.
      b. Corner Condition in Elevation: Square.
   3. Mounting: Manufacturer's standard method for substrates indicated, surface mounted to wall.
   4. Text and Typeface: Accessible raised characters and Braille.
      a. Typeface as selected by Architect from manufacturer's full range
      b. Finish raised characters to contrast with background color, and finish Braille to match background color.

2.3 SIGN MATERIALS

A. Acrylic Sheet: ASTM D4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
   1. Use concealed fasteners and anchors unless indicated to be exposed.

B. Adhesive: As recommended by sign manufacturer.

C. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
   1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
   2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
   3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
   4. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.
   1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
   2. Install signs so they do not protrude or obstruct according to the accessibility standard.
   3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

B. Accessibility: Install signs in locations on walls as indicated on Drawings and according to the accessibility standard.

C. Mounting Methods:
   1. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support

weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

2. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.2 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423.16

SECTION 102113 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Solid-color reinforced composite toilet compartments configured as toilet enclosures and urinal screens.

B. Related Sections:
   1. Section 061053 "Miscellaneous Rough Carpentry" for blocking and overhead support of floor-and-ceiling-anchored compartments.
   2. Section 102800 "Toilet, Bath, and Laundry Accessories" for toilet tissue dispensers, grab bars, and similar accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for toilet compartments.

B. Shop Drawings: For toilet compartments.
   1. Include plans, elevations, sections, details, and attachment details.
   2. Show locations of cutouts for compartment-mounted toilet accessories.
   3. Show locations of centerlines of toilet fixtures.
   4. Show locations of floor drains.
   5. Show overhead support or bracing locations.

C. Samples for Initial Selection: For each type of unit indicated.
   1. Include Samples of hardware and accessories involving material and color selection.

D. Samples for Verification: For the following products, in manufacturer's standard sizes unless otherwise indicated:
   1. Each type of material, color, and finish required for units, prepared on 6-inch- square Samples of same thickness and material indicated for Work.
   2. Each type of hardware and accessory.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of toilet compartment, from manufacturer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For toilet compartments to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 10-years experience manufacturing similar products.

B. Installer Qualifications: Minimum 2-years experience installing similar products.

C. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.

D. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements, as applicable.

1.7 DELIVERY, STORAGE AND HANDLING

A. Pre-finished materials shall be delivered to the job site in original, unopened cartons or other packaging materials necessary to protect structure and finishes.

B. Materials shall be stored in manufacturer’s packaging until installation.

C. Partitions shall be stored in horizontal position with adequate support to ensure flatness and to prevent damage to pre-finished surfaces.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 WARRANTY

A. Furnish manufacturer’s standard 25-year limited warranty for panels, doors, and stiles against breakage, corrosion, delamination, and defects in factory workmanship.

B. Furnish one-year guarantee against defects in material and workmanship for stainless steel door hardware and mounting brackets.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design Manufacturers/Products: Subject to compliance with requirements, provide toilet compartment products by the following manufacturer:
   1. Bobrick Washroom Equipment, Inc., which is located at: 6901 Tujunga Ave.; North Hollywood, CA 91605-6213; Tel: 818-764-1000; Fax: 818-765-2700; Email:info@bobrick.com; Web:www.bobrick.com
   2. Basis of Design: 1092/1092.67 Sierra Series, or equivalent.

B. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:
   1. Ampco, Inc.
   2. Bradley Corporation; Mills Partitions.
   3. Hadrian Manufacturing Inc.
   4. Scranton Products (Santana/Comtec/Capitol).

2.2 SOLID COLOR REINFORCED COMPOSITE (SCRC) SUBSTRATE

A. Solid Color Reinforced Composite (SCRC) Toilet Partitions:
   1. Bobrick Sierra Series.

B. Design Type:
   1. Standard Height.
      a. Door/Panel Height: 58 inches.
      b. Floor Clearance: 12 inches.

C. Privacy Style Partitions: No sightlines with gap-free interlocking doors and stiles routed 0.300 inches from the edge to allow for 0.175 inch overlap to prevent line-of-sight into the toilet compartment.
   1. Privacy strips fastened or adhered onto the partition material are not acceptable.

D. Mounting Configuration:
   1. Floor-mounted, overhead-braced with satin finish, extruded anodized aluminum headrails, 0.065 inch thick with anti-grip profile and integral curtain tracks and hooks for compartments without doors
   2. Stile Height: 83 inches (211 cm).

2.3 COMPONENTS/MATERIALS

A. Solid color reinforced composite (SCRC) material for stiles, panels, doors, and screens, thermoset and integrally fused into homogenous piece.
   1. High density polyethylene (HDPE), high density polypropylene not acceptable.

B. Composition: Dyes, organic fibrous material, and polycarbonate/phenolic resins.

C. Surface Treatment: Non-ghosting, graffiti resistant surface integrally bonded to core through a manufacturing steps requiring thermal and mechanical pressure.

D. Edges: Same color as the surface.

E. Color: As selected by Owner from manufacturer's full range.

F. Acceptable SCRC Products: Or manufacturer approved equal.
1. Ultimate Corian System by Shower Shapes.
2. WilsonArt Gibraltar Material.
3. WilsonArt EarthStone Material.

G. Performance Requirements:
1. Graffiti Resistance (ASTM D 6578): Passed cleanability test; 5 staining agents.
2. Scratch Resistance (ASTM D 2197): Maximum load value exceeds 10 kilograms.
3. Impact Resistance (ASTM D 2794): Maximum impact force exceeds 30 inch-pounds.
4. Smoke Developed Index (ASTM E 84): Less than 450.
5. Flame Spread Index (ASTM E 84): Less than 75.
6. National Fire Protection Association/International Building Code Interior Wall and Ceiling Finish: Class B.
7. Uniform Building Code: Class II.

H. Finish Thickness:
1. Stiles and doors shall be 3/4".
2. Panels and benches shall be 1/2".

I. Stiles: Floor-anchored stiles furnished with expansion shields and threaded rods.
1. Leveling Devices: 7 gauge, 3/16 inches thick, corrosion-resistant, chromate-treated, double zinc-plated steel angle leveling bar bolted to stile; furnished with 3/8-inch diameter threaded rods, hex nuts, lock washers, flat washers, spacer sleeves, expansion anchors, and shoe retainers.
2. Stile Shoes: One-piece, 22 gauge, 18-8, Type 304 stainless steel, 4-inch height; tops with 90 degree return to stile. One-piece shoe capable of adapting to 3/4 inch or 1 inch stile thickness and capable of being fastened (by clip) to stiles starting at wall line.

J. Hardware: Chrome-plated "Zamak", aluminum, extruded plastic hardware not acceptable.
1. Compliance: Operating force of less than 5 lb (2.25 kg).
2. Emergency Access: Hinges, door latch allow door to be lifted over keeper from outside compartment on inswing doors.
3. Materials: 18-8, Type 304, heavy-gauge stainless steel with satin finish.
4. Doorstops: Prevents inswinging doors from swinging out beyond stile; on outswing doors, doorstop prevents door from swinging in beyond stile.
5. Fastening: Hardware secured to door and stile by through-bolted, theft-resistant, pin-in-head Torx stainless steel machine screws into factory-installed, threaded brass inserts. Fasteners secured directly into core not acceptable.
6. Threaded Brass Inserts: Factory-installed; withstand direct pull force exceeding 1500 lb per insert.
7. Clothes Hooks: Projecting no more than 1-1/8 inch (29 mm) from face of door.
8. Door Latch: Track of door latch prevents inswing doors from swinging out beyond stile; on outswing doors, door keeper prevents door from swinging in beyond stile; 16 gauge sliding door latch, 14 gauge keeper.
9. Locking: Door locked from inside by sliding door latch into keeper.
10. Hinge Type:
    a. Balanced, with field-adjustable cam to permit door to be fully closed or partially open when compartment is unoccupied.

K. Mounting Brackets:
1. Standard Concealed.
    a. Mounting Brackets: Mounted inside compartment; exposed brackets on exterior of compartment not acceptable with the exception of outswing doors.
2. Full-Height.
    a. Mounting Brackets: 18 gauge (1.2 mm) stainless steel and extend full height of panel.
    b. U-Channels: Secure panels to stiles.

2.4 FABRICATION

A. Fabrication, General: Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.

B. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

C. Door Size and Swings: Unless otherwise indicated, provide 24-inch- wide, in-swinging doors for standard toilet compartments and 36-inch- wide, out-swinging doors with a minimum 32-inch- wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for fastening, support, alignment, operating clearances, and other conditions affecting performance of the Work.
1. Confirm location and adequacy of blocking and supports required for installation.

B. Prepare substrates including but not limited to blocking and supports in walls and ceilings at points of attachment using methods recommended by the manufacturer for achieving the best result for the substrates under the project conditions.
1. Inspect areas scheduled to receive compartments for correct dimensions, plumbness of walls, and soundness of surfaces that would affect installation of mounting brackets.
2. Verify spacing of plumbing fixtures to assure compatibility with installation of compartments.

C. Proceed with installation only after unsatisfactory conditions have been corrected.
1. Do not proceed with installation until substrates have been properly prepared with blocking and supports in walls and ceilings at points of attachment and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.

3.2 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
1. Maximum Clearances:
a. Pilasters and Panels: 1/2 inch.
b. Panels and Walls: 1 inch.
2. Installers must allow 24 hours for material to adjust to the site environment. Banding, stretch wrap and cardboard should be removed as recommended by manufacturer.

B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than 1-3/4 inches into structural floor unless otherwise indicated in manufacturer's written instructions.
1. Secure continuous head rail to each pilaster with no fewer than two fasteners.
2. Use fasteners and anchors suitable for substrate and project conditions
3. Hang doors to align tops of doors with tops of panels and adjust so tops of doors are parallel with overhead brace when doors are in closed position.

4. Install panel or locate out swinging doors to prevent their opening more than 105 degrees.
5. Conceal evidence of drilling, cutting, and fitting to room finish.

C. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

3.3 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

B. Doors and hardware shall be thoroughly adjusted and left in proper working condition.
1. Verify blocking and supports in walls and ceilings has been installed properly at points of attachment.
2. Verify location does not interfere with door swings or use of fixtures.
3. Test for proper operation.

3.4 CLEANING

A. Leave compartments complete, clean and free from defects in workmanship.

B. All rubbish and cartons generated by installer shall be removed and the area left clean.

END OF SECTION 102113

SECTION 102600 - WALL AND DOOR PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Corner guards.
   2. Door jamb wall guards.
   3. Crash rails.
   4. Impact-resistant wall coverings.

B. Related Sections:
   1. Section 061053 “Miscellaneous Rough Carpentry” for furring, blocking, and shims required for installing wall protection and concealed within other construction before installation.
   2. Section 087100 "Door Hardware" for metal armor, kick, mop, and push plates.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, impact strength, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For each type of wall and door protection showing locations and extent.
   1. Include plans, elevations, sections, and attachment details.

C. Samples for Initial Selection: For each type of impact-resistant wall-protection unit indicated, in each color and texture specified.
   1. Include Samples of accent strips and accessories to verify color selection.

D. Samples for Verification: For each type of exposed finish on the following products, prepared on Samples of size indicated below:
   1. Wall Guards: 12 inches long. Include examples of joinery, corners, end caps, and field splices.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of handrail.

B. Material Certificates: For each type of exposed plastic material.

C. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of wall and door protection product to include in maintenance manuals.
   1. Include recommended methods and frequency of maintenance for maintaining best condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to finishes and performance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store impact-resistant wall protection units in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
   1. Maintain room temperature within storage area at not less than 70 deg F (21 deg C) during the period plastic materials are stored.
   2. Keep plastic sheet material out of direct sunlight.
   3. Store plastic wall protection components for a minimum of 72 hours, or until plastic material attains a minimum room temperature of 70 deg F (21 deg C).
      a. Store corner-guard covers in a vertical position.
      b. Store wall-guard covers in a horizontal position.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of impact-resistant wall protection units that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Structural failures including detachment of components from each other or from the substrates, delamination, and permanent deformation beyond normal use.
      b. Deterioration of metals, metal finishes, plastics, and other materials beyond normal use.
   2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain wall- and door-protection products of each type from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Surface Burning Characteristics: Comply with ASTM E84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   1. Flame-Spread Index: 25 or less.
   2. Smoke-Developed Index: 450 or less.

B. Regulatory Requirements: Comply with applicable provisions in the current edition of the Building Code of New York State and ICC A117.1.

2.3 CORNER GUARDS <CG>

A. Surface-Mounted, Resilient, Vinyl/Acrylic Corner Guards: Assembly consisting of snap-on vinyl/acrylic cover installed over continuous retainer; including mounting hardware.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Acrovyn by Construction Specialties, Model SM-20/SSM-20 or comparable product by one of the following:
      a. Arden Architectural Specialties, Inc.
      b. IPC Door and Wall Protection Systems; Division of InPro Corporation.
      c. Pawling Corporation.
      d. WallGuard.com.
   2. Cover: Extruded vinyl/acrylic, minimum 0.078-inch wall thickness; as follows:
      a. Profile: Nominal 3-inch-long leg and 1/4-inch corner radius at outside corners.
      b. Profile: Nominal 2-inch-long leg and 1/4-inch corner radius at endwall covers.
      c. Height: 4 feet, or a indicated on Drawings.
      d. Color and Texture: As selected by Owner from manufacturer's full range.
   3. Retainer: One-piece extruded vinyl/acrylic.
   4. Top and Bottom Caps: Prefabricated, injection-molded plastic; color matching cover; field adjustable for close alignment with snap-on cover.
   5. Attachment hardware shall be appropriate for wall construction.

B. Surface-Mounted, Resilient, Vinyl/Acrylic Door Jamb Wall Guards: Assembly consisting of vinyl/acrylic installed over substrate.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide Acrovyn by Construction Specialties, Model TFC or comparable product by one of the following:
      a. Arden Architectural Specialties, Inc.
      b. IPC Door and Wall Protection Systems; Division of InPro Corporation.
      c. Pawling Corporation.
      d. WallGuard.com.
   2. Extruded vinyl/acrylic, minimum 0.040 inch wall thickness; as follows:
      a. Profile: Nominal 1-inch-long leg.
      b. Height: Perimeter of opening as indicated on Drawings.
      c. Color and Texture: As selected by Owner from manufacturer's full range.
   3. Adhesive shall be appropriate for wall construction.

2.4 CRASH RAILS

A. Surface-Mounted, Resilient Vinyl/Acrylic Crash Rails: Surface, bumper, or extended mounted assembly consisting of a continuous aluminum retainer with snap-on cover and integral shock absorbing cushions.
   1. Basis-of-Design: Subject to compliance with requirements, provide Acrovyn by Construction Specialties, Inc., Model SCR-40N or comparable product by one of the following:
      a. Arden Architectural Specialties, Inc.
      b. IPC Door and Wall Protection Systems; Division of InPro Corporation.
      c. Pawling Corporation.
      d. WallGuard.com
   2. Cover: Extruded vinyl/acrylic, minimum 0.078-inch (2.0-mm) wall thickness; as follows:
      a. Profile: Nominal 4-inch high with 13/16-inch return.
      b. Color and Texture: As selected by Owner’s Representative from manufacturer’s full range.
   3. Retainer: One-piece extruded aluminum.
   4. End Caps and Corners: Color matched, to be removable for ease of replacement.
   5. Attachment hardware shall be appropriate for wall construction.

2.5 IMPACT-RESISTANT WALL COVERINGS

A. Wall Covering Liner: For use over ceramic tiles, concrete blocks, laminates, plywood paneling, and other irregular surfaces where Flexible Impact-Resistant Sheet Wall Coverings are to be installed.
   1. Basis-of-Design: Subject to compliance with requirements, provide Rampart Stronghold Liner RSL 609 or comparable product.
   2. Content: 100% Gypsum Cement
   3. Backing: Jute.
   4. Width: 48 inches.
   5. Weight: 48 oz. per linear yard.
   6. Mounting: Adhered, edges overlapped and double-cut, installed in accordance with manufacturer's installation instructions.
   7. Adhesive: Water-based adhesive approved for use by wall covering liner manufacturer.

B. Flexible Impact-Resistant Sheet Wall Covering: Fabricated from rolled sheet wall covering material.
   1. Basis-of-Design: Subject to compliance with requirements, provide Rampart series by Wolf Gordon or comparable product.
   2. Material: 100% vinyl.
   3. Finish: Abrasion-resistant treatment.
   4. Backing. Dense Polyester/Cotton.
   5. Width: 52-inches wide roll.
   6. Weight: 35 oz. per linear yard.
   7. Color and Texture: As selected by Owner's Representative from manufacturer's full range.
   8. Trim and Joint Moldings: Use manufacturer's standard extruded vinyl trims and joint moldings as indicated on Drawings.
   9. Mounting: Adhered, installed seamlessly in accordance with manufacture's installation instructions.
   10. Adhesive: Heavy-duty, clay-based vinyl wallcovering adhesive approved for use by flexible impact-resistant sheet wall covering manufacturer.

2.6 MATERIALS

A. Vinyl/Acrylic: Extruded material should be high impact Acrovyn with pebblette grain texture, nominal 0.078" (1.98mm) thickness.
   1. Chemical and stain resistance should be per ASTM D-1308 standards as established by the manufacturer.

B. Aluminum Retainers: Extruded aluminum retainers should be 6063-T6 alloy, nominal 0.062" (1.57mm) thickness. Minimum strength and durability properties as specified in ASTM B221.

C. Regrind Retainer: Recycled vinyl/acrylic compound.

D. Stainless steel: To be type 304 alloy with #4 satin finish; minimum strength and durability properties as specified in ASTM A276.

E. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers.
   1. All necessary fasteners to be supplied by the manufacturer.

2.7 FABRICATION

A. Fabricate wall protection units to comply with requirements indicated for design, dimensions, and member sizes, including thicknesses of components.

B. Factory Assembly: Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.

C. Quality: Fabricate components with uniformly tight seams and joints and with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.

2.8 FINISHES

A. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. General: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applications and designations of finishes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and wall areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Examine walls to which impact-resistant wall protection will be attached for blocking, grounds, and other solid backing that have been installed in the locations required for secure attachment of support fasteners.
   1. For impact-resistant wall protection units attached with adhesive or foam tape, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Complete finishing operations, including painting, before installing impact-resistant wall protection system components.

B. Before installation, clean substrate to remove dust, debris, and loose particles.

3.3 INSTALLATION

A. General: Install the work of this section in strict accordance with the manufacturer’s recommendations, using only approved adhesive or mounting hardware and locating all components firmly into position, level and plumb.
   1. Install impact-resistant wall protection units in locations and at mounting heights indicated on Drawings.
   2. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation.

a. Provide anchoring devices to withstand imposed loads.
b. Where splices occur in horizontal runs of more than 20 feet (6.1 m), splice aluminum retainers and plastic covers at different locations along the run, but no closer than 12 inches.
c. Adjust end and top caps as required to ensure tight seams.

3.4 CLEANING

A. General: Immediately upon completion of installation, clean material in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

C. Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

END OF SECTION 102600

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Washroom accessories.
   2. Childcare accessories.
   3. Custodial accessories.

B. Related Sections:
   1. Section 061053 "Miscellaneous Rough Carpentry" for furring, blocking, and shims required for installing accessories and concealed within other construction before installation.

1.3 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
   1. Identify locations using room designations indicated.
   2. Identify accessories using designations indicated.

C. Delegated Design Submittal: For grab bars.
   1. Include structural design calculations indicating compliance with specified structural-performance requirements.

1.5 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For accessories to include in maintenance manuals.

1.7 WARRANTY

A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, visible silver spoilage defects.
   2. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Design accessories and fasteners to comply with the following requirements:
   1. Grab Bars: Installed units are able to resist 250 lbf concentrated load applied in any direction and at any point.

B. American National Standards Institute (ANSI):
   1. ANSI A 117.1 - Accessible and Usable Buildings and Facilities.

2.2 MANUFACTURERS

A. Source Limitations: Obtain each type of product from single source from single manufacturer.

B. Basis of Design Manufacturers/Products: Subject to compliance with requirements, provide toilet and bathroom accessory products by the following manufacturer:
   1. Bradley Corporation, Menomonee Falls, WI 53051, (800) 272-3539, fax: (262) 251-5817; Email info@BradleyCorp.com; Website: www.bradleycorp.com.

C. Basis of Design Manufacturers/Products: Subject to compliance with requirements, provide baby changing station products by the following manufacturer:
   1. Koala Care Products, Centennial, CO 80112, (888) 733-3456, fax: (303) 539-8399; Email; customerservice@koalabear.com; Website: www.koalabear.com.

D. Basis of Design Manufacturers/Products: Subject to compliance with requirements, provide stainless steel shelving products by the following manufacturer:
   1. Winholt Equipment Group, Woodbury, NY 11797, (800) 444-3595, fax: (516) 921-0538; Email; sales@winholt.com; Website: www.winholt.com.

E. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following subject to conformance with the performance requirements stated herein and as shown on the Drawings:
   1. A&J Washroom Accessories, Inc.
   2. Bobrick Washroom Equipment, Inc.
   3. American Specialties, Inc.

2.3 TOILET, BATH AND LAUNDRY ACCESSORY SCHEDULE

A. General: Provide the following toilet and bath accessories in the locations indicated on the Drawings and Schedules.

TOILET AND CUSTODIAL ACCESSORIES

TAG #	Model/Series	Description
1A	812 Series	18” Vertical Concealed Mounting Grab Bar 1-1/2" diameter
1B	812 Series	36” Horizontal Concealed Mounting Grab Bar 1-1/2" diameter
1C	812 Series	42” Horizontal Concealed Mounting Grab Bar 1-1/2" diameter
2A	5A10	Toilet Paper Dispenser (surface mounted)
2B	5A20	Toilet Paper Dispenser (partition mounted)
3A	4A10	Sanitary Napkin Disposal (surface mounted)
3B	4A11	Sanitary Napkin Disposal (partition mounted)
4A	KB112-01RE	Countertop Recessed Mounted Baby Changing Station
4B	KB200	Wall Mounted Baby Changing Station
5A	747 Series	60” x 42” Frameless Mirror
5B	747 Series	75” x 42” Frameless Mirror
5C	780 Series	24” x 36” Framed Mirror
6A	2A05	Paper Towel Dispenser/Waste Receptacle (recessed)
6B	2A25-1136	Paper Towel Dispenser/Waste Receptacle (surface mounted)
6C	A200	Paper Towel Dispenser/Waste Receptacle (above counter recessed)
7	P10-696	Circular Waste Chute
8	377	Free Standing Waste Receptacle
9	9933	Mop Rack with Shelf
10A	9943	Coat Hook Strip
10B	9134	Coat Hook
11	155-11	Medicine Cabinet
12	K-1995	Soap Dispenser, Provided by Plumbing Contractor

2.4 MATERIALS

A. Stainless Steel: ASTM A 666 Type 304 (18-8); satin finish exposed surfaces unless otherwise indicated.

B. Steel Sheet: ASTM A 1008/A 1008M, Designation CS, manufacturer’s standard thickness.

C. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating, manufacturer’s standard thickness.

D. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

E. Fasteners: Screws, bolts, and other devices of same material as accessory unit, unless otherwise recommended by manufacturer or specified in this Section, and tamper and theft resistant where exposed, and of stainless or galvanized steel where concealed.

F. Chrome Plating: ASTM B456, Service Condition Number SC 2 (moderate service).

G. Mirrors: ASTM C1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

H. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.5 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure detention toilet accessories rigidly in place and to support expected loads.
1. Build in straps, plates, and brackets as needed to support and anchor fabricated items to adjoining construction. Reinforce formed-metal units as needed to attach and support other construction.

C. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of **six** keys to Owner's representative.
1. Accessories with tumbler locks shall be keyed alike with the exception of coin boxes in vending equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Check wall open for dimensions, plumbness of blocking or frames that would affect installation of recessed accessories.
1. For surface mounted accessories check condition of wall and confirm installation of backing within wall.

B. Verify spacing of plumbing fixtures and toilet compartments that affect installation of toilet room accessories.

3.2 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
1. Remove temporary labels and protective coatings.

B. Installation methods shall conform to manufacturers recommendations for backing and proper support.
1. Conceal evidence of drilling, cutting, and fitting to room finish.
2. Fit flanges of accessories snugly to wall surfaces.

C. Grab Bars: Install to comply with specified structural-performance requirements.

3.3 ADJUSTMENT AND CLEANING

A. Upon completion of the work, or when directed, remove all traces of protective coatings or paper.

B. Adjust accessories for proper operation.
   1. Test mechanisms, hinges, locks and latches and where necessary adjust and lubricate.

C. Clean and polish exposed surfaces prior to final installation.

D. Deliver accessories schedule, keys, and parts manual as part of project closeout documents. For owner's permanent records, provide two sets of the following items of manufacturer's literature:
   1. Technical data sheets of each item used for the project.
   2. Service and parts manuals.
   3. Name of local representative to be contacted in the event of need of field service or consultation.

END OF SECTION 102800

SECTION 104413 - FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Fire protection cabinets for the following:
      a. Portable fire extinguishers furnished by Owner.

B. Related Sections:
   1. Section 092216 "Non-Structural Metal Framing" for framed openings in fire-resistance rated partitions walls for recessed fire-rated cabinets.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Show door hardware, cabinet type, trim style, and panel style. Include roughing-in dimensions and details showing recessed-, semi-recessed-, or surface-mounting method and relationships of box and trim to surrounding construction.

B. Shop Drawings: For fire-protection cabinets.
   1. Include plans, elevations, sections, details, and attachments to other work.

C. Samples for Initial Selection: For each type of exposed finish required.

D. Product Schedule: For fire-protection cabinets. Indicate whether recessed, semi-recessed, or surface mounted. Coordinate final fire-protection cabinet schedule with fire-extinguisher schedule to ensure proper fit and function.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For fire protection cabinets to include in maintenance manuals.

1.5 COORDINATION

A. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Coordinate sizes and locations of fire protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain fire-protection cabinets, accessories, and fire extinguishers from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Rated Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E814 for fire-resistance rating of walls where they are installed.

2.3 FIRE EXTINGUISHER CABINET <F.E.C.>

A. Cabinet Type: Suitable for fire extinguisher.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers that may be incorporated into the Work include, but are not limited to, the following:
      a. J. L. Industries, Inc., a division of Activar Construction Products Group.
      b. Kidde Residential and Commercial Division, Subsidiary of Kidde plc.
      c. Larsen's Manufacturing Company.

B. Cabinet Construction: 1-hour fire rated.
   1. Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 0.043-inch-thick cold-rolled steel sheet lined with minimum 5/8-inch- thick fire-barrier material. Provide factory-drilled mounting holes.

C. Cabinet Material: Same material and finish as door.

D. Semi-recessed Cabinet: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).
   1. Rolled-Edge Trim: 2-1/2-inch backbend depth.

E. Surface-Mounted Cabinet: Cabinet box fully exposed and mounted directly on wall with no trim.

F. Cabinet Trim Material: Same material and finish as door.

G. Door Material: Aluminum sheet.

H. Door Style: Fully glazed panel with frame.

I. Door Glazing: Tempered float glass (clear).

J. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
   1. Provide manufacturer's standard.
   2. Provide continuous hinge, of same material and finish as trim, permitting door to open 180 degrees.

K. Accessories:
   1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.

2. Lettered Door Handle: One-piece, cast-iron door handle with the word "FIRE" embossed into face.
3. Door Lock: Cam lock that allows door to be opened during emergency by pulling sharply on door handle.
4. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
    a. Identify fire extinguisher in fire protection cabinet with the words "FIRE EXTINGUISHER."
        1) Location: Applied to cabinet glazing.
        2) Application Process: Die-cut.
        3) Lettering Color: Red.
        4) Orientation: Vertical.
5. Alarm: Manufacturer's standard alarm that actuates when fire protection cabinet door is opened and that is powered by batteries.

L. Materials:
1. Cold-Rolled Steel: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
    a. Finish: Baked enamel, TGIC polyester powder coat, HAA polyester powder coat, epoxy powder coat, or polyester/epoxy hybrid powder coat, complying with AAMA 2603.
    b. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    c. Color: As selected by Architect from full range of industry colors and color densities.
2. Aluminum: ASTM B 221 (ASTM B 221M), with strength and durability characteristics of not less than Alloy 6063-T5 for aluminum sheet. ASTM B 221 (ASTM B 221M) for extruded shapes.
    a. Finish: Clear anodic.
    b. Color: As selected by Architect from full range of industry colors and color densities.
3. Stainless Steel: ASTM A240/A240M or ASTM A666, Type 304.
4. Finish: ASTM A480/A480M No. 4 directional satin finish.
5. Tempered Float Glass: ASTM C 1048, Kind FT, Condition A, Type I, Quality q3, 3 mm thick, Class 1 (clear).

2.4 FABRICATION

A. Fire-Protection Cabinets: Provide manufacturer's standard box (tub) with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated.
1. Weld joints and grind smooth.
2. Miter corners and grind smooth.
3. Provide factory-drilled mounting holes.
4. Prepare doors and frames to receive locks.

B. Cabinet Doors: Fabricate doors according to manufacturer's standards, from materials indicated and coordinated with cabinet types and trim styles.
1. Fabricate door frames with tubular stiles and rails and hollow-metal design, minimum 1/2 inch thick.
2. Miter and weld perimeter door frames.

C. Cabinet Trim: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.

2.5 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces of fire protection cabinets from damage by applying a strippable, temporary protective covering before shipping.

C. Finish fire protection cabinets after assembly.

D. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine walls and partitions for suitable framing depth and blocking where semi-recessed cabinets will be installed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare recesses for semi-recessed fire protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

A. General: Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.
   1. Fire-Protection Cabinets: 42 inches above finished floor to top of fire extinguisher.
   2. Coordinate with wall protection crash rail locations, where indicated.

B. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.
   1. Unless otherwise indicated, provide recessed fire protection cabinets. If wall thickness is not adequate for recessed cabinets, provide semi-recessed fire protection cabinets.
   2. Provide inside latch and lock for break-glass panels.
   3. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb.

C. Identification: Apply lettering at locations indicated.

3.4 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.

E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104413

MONTGOMERY COUNTY NY

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DIVISION 12

Furnishings

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Solid surface material countertops.
   2. Solid surface material backsplashes.

B. Related Requirements:
   1. Section 061053 "Miscellaneous Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.
   2. Section 064900 “Plastic-Laminate-Faced Architectural Cabinets” for base cabinets.
   3. Section 079200 “Joint Sealants” for sealing joints at dissimilar materials.
   4. Section 102800 “Toilet, Bath and Laundry Accessories” for accessories mounted in countertops.
   5. Section 224000 "Plumbing Fixtures" for non-integral sinks and plumbing fittings.

1.3 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

C. Samples for Initial Selection: For each type of material exposed to view.

D. Samples for Verification: For the following products:
   1. Countertop material, 6 inches square.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate countertops similar to that required for this Project, and whose products have a record of successful in-service performance.

B. Installer Qualifications: Fabricator of countertops.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

1.7 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

A. Solid Surface Material: Homogeneous solid sheets of filled plastic resin complying with ANSI SS1.
   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Avonite Surfaces.
      b. Formica Corporation.
      c. Wilsonart International.
      d. Nevamar Company, Inc.
   2. Type: Provide Standard type, unless Special Purpose type is indicated.
   3. Colors and Patterns: As selected by **Owner's Project Representative** from manufacturer's full range.

B. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.

C. Plywood: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.

2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."
   1. Grade: Custom.

B. Configuration: Provide countertops with the following front and backsplash style:
   1. Front: 1-1/2-inch straight, slightly eased at top.
   2. Backsplash: Straight, slightly eased at corner.
   3. Endsplash: Matching backsplash.

C. Countertops: 1/2-inch- thick, solid surface material with front edge built up with same material.

D. Backsplashes: 1/2-inch- thick, solid surface material.

E. Fabrication: Fabricate tops in one piece with shop-applied edges and backsplashes unless otherwise indicated. Comply with solid-surface-material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
   1. Fabricate with loose backsplashes for field assembly, where required.

F. Joints: Fabricate countertops without joints, to the greatest extent possible.
   1. Joint Locations: Not within 18 inches of a sink or cooktop and not where a countertop section less than 36 inches long would result, unless unavoidable.

2. Splined Joints: Accurately cut kerfs in edges at joints for insertion of metal splines to maintain alignment of surfaces at joints. Make width of cuts slightly more than thickness of splines to provide snug fit.

G. Cutouts and Holes:
1. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
a. Coordinate with fixtures provide by Plumbing Contractor
2. Fittings: Drill countertops in shop for undercounter soap dispensers, and similar items.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.

B. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

C. Secure countertops to sub-tops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

D. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
1. Install metal splines in kerfs in countertop edges at joints[**where indicated**]. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position.

E. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

F. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Predrill holes for screws as recommended by manufacturer.

G. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
   1. Seal edges of cutouts in particleboard subtops by saturating with varnish.

H. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16

SECTION 124813 - ENTRANCE FLOOR MATS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Roll-up rail mats.
   2. Recessed frames.
   3. Surface-mounted frames.

B. Related Requirements:
   1. Section 033000 “Cast-in-Place Concrete” for sealing concrete slabs below entrance mats.

1.3 COORDINATION

A. Coordinate size and location of recesses in concrete to receive floor mats and frames.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for floor mats and frames.

B. Shop Drawings:
   1. Items penetrating floor mats and frames, including door control devices.
   2. Divisions between mat sections.
   3. Perimeter floor moldings.

C. Samples: For the following products, in manufacturer's standard sizes:
   1. Floor Mat: Assembled sections of floor mat.
   2. Tread Rail: Sample of each type and color.
   3. Frame Members: Sample of each type and color.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For floor mats and frames to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 ENTRANCE FLOOR MATS AND FRAMES, GENERAL

A. Structural Performance: Provide roll-up rail mats and frames capable of withstanding the following loads and stresses within limits and under conditions indicated:
   1. Wheel load of 350 lb (159 kg) per wheel.

B. Regulatory Requirements: Comply with applicable provisions in ICC A117.1 and Chapter 11 of the *Building Code of New York State*.

C. Slip Resistance: Coefficient of friction of 0.60 or greater, in accordance with ASTM D2047 tested in wet conditions.

D. Single Source: Obtain entrance matting and frames from a single source.

2.2 MATERIALS

A. Aluminum: ASTM B221, Alloy 6105-T5 and 6063-T5 for extrusions.

B. Flexible Vinyl: 80 Durometer, flexible PVC.

2.3 ROLL-UP RAIL MATS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Model EM-800 Rol-Dek Entrance Matting by Pawling Corporation or a comparable product by one of the following:
   1. Balco, Inc.
   2. C/S Group.
   3. J. L. Industries, Inc.
   4. Kadee Industries, Inc.
   5. Mats Inc.
   6. Reese Enterprises, Inc.

B. Roll-up, Aluminum-Rail Hinged Mats: Extruded-aluminum tread rails 1 7/8 inches wide by 7/16 inch thick, sitting on continuous vinyl cushions.
   1. Tread Inserts: Maxi-Tuft Long Wear “MLW” Carpet.
      a. Space dyed
      b. 100% polyamide nylon
      c. Tetra-lobal fibers
      d. 30 oz. per sq. yard.
      e. Carpet fibers fusion bonded to continuous two-ply rigid backing.
      f. Carpet fibers incorporate anti-stain, anti-static, and anti-microbial additives.
   2. Flexible Nosing: EMV-608 and EMV-10 for recess applications.
      a. Vinyl
      b. Field trimmed to accommodate irregularities in recess opening.
   3. Colors, Textures, and Patterns of Inserts: As selected by **Owner’s Project Representative** from full range of industry colors.
   4. Rail Color: Mill finish.
   5. Hinges: Aluminum.
   6. Mat Size: As indicated.

2.4 FRAMES

A. Recessed Frames: Manufacturer's standard extrusion.
1. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6105-T5 or Alloy 6063-T5.
2. Angle Frame: Model SSF-125.
a. Exposed Perimeter: 1/8 inch.
b. Recess: 7/16 inch.
c. Color: As selected by **Owner's Project Representative** from full range of industry colors and color densities.
3. Architectural Bronze: ASTM B 455, Alloy UNS No. C38500.

B. Surface-Mounted Frames: Manufacturer's standard extrusion.
1. Extruded Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6105-T5 or Alloy 6063-T5.
2. Tapered Frame: Model BSF-225.
a. Exposed Perimeter: 2 inch.
b. Recess: 7/16 inch.
c. Color: As selected by **Owner's Project Representative** from full range of industry colors and color densities.
3. Architectural Bronze: ASTM B 455, Alloy UNS No. C38500.

2.5 CONCRETE FILL AND GROUT MATERIALS

A. Provide concrete fill and grout equivalent in strength to cast-in-place concrete slabs for recessed mats and frames. Use aggregate no larger than one-third fill thickness.

2.6 FABRICATION

A. Floor Mats: Shop fabricate units to greatest extent possible in sizes indicated. Unless otherwise indicated, provide single unit for each mat installation; do not exceed manufacturer's recommended maximum sizes for units that are removed for maintenance and cleaning. Where joints in mats are necessary, space symmetrically and away from normal traffic lanes. Miter corner joints in framing elements with hairline joints or provide prefabricated corner units without joints.

B. Recessed Frames: As indicated, for permanent recessed installation, complete with corner pins or reinforcement and anchorage devices.
1. Fabricate edge-frame members in single lengths or, where frame dimensions exceed maximum available lengths, provide minimum number of pieces possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins.

C. Coat concealed surfaces of aluminum frames that contact cementitious material with manufacturer's standard protective coating.

2.7 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and floor conditions for compliance with requirements for location, sizes, minimum recess depth, and other conditions affecting installation of floor mats and frames.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install recessed or surface-mounted mat frames, subject to as-found floor conditions, to comply with manufacturer's written instructions. Set mat tops at height recommended by manufacturer for most effective cleaning action; coordinate tops of mat surfaces with bottoms of doors that swing across mats to provide clearance between door and mat.
   1. Install necessary shims, spacers, and anchorages for proper location, and secure attachment of frames.
   2. Install grout and fill around frames and, if required to set mat tops at proper elevations, in recesses under mats. Finish grout and fill smooth and level.

3.3 PROTECTION

A. After completing frame installation and concrete work, provide temporary filler of plywood or fiberboard in recesses and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended and Project is near Substantial Completion.

END OF SECTION 124813

MONTGOMERY
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DIVISION 21

Fire Suppression

SECTION 210500 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Pipe, fittings, sleeves, escutcheons, seals, and connections for sprinkler systems.

1.3 RELATED REQUIREMENTS

A. Section 078413 - Penetration Firestopping.

B. Section 211300 - Fire-Suppression Sprinkler Systems: Sprinkler systems design.

1.4 REFERENCE STANDARDS

A. ASME A112.18.1 - Plumbing Supply Fittings 2018, with Errata.

B. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators 2021.

C. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250 2020.

D. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300 2016.

E. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250 2016.

F. ASME B16.5 - Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard 2020.

G. ASME B16.11 - Forged Fittings, Socket-Welding and Threaded 2016, with Errata (2017).

H. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings 1999, with Editorial Revision (2018).

I. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.

J. ASTM A135/A135M - Standard Specification for Electric-Resistance-Welded Steel Pipe 2021.

K. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service 2019.

L. ASTM A536 - Standard Specification for Ductile Iron Castings 1984 (Reapproved 2019)e1.

M. ASTM A795/A795M - Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use 2021.

N. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).

O. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings 2012.

P. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast 2017, with Errata (2018).

Q. AWWA C606 - Grooved and Shouldered Joints 2015.

R. FM (AG) - FM Approval Guide current edition.

S. NFPA 13 - Standard for the Installation of Sprinkler Systems Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

T. UL (DIR) - Online Certifications Directory Current Edition.

1.5 SUBMITTALS

A. See Section 133300, for submittal procedures.

B. Product Data: Provide manufacturer's catalog information. Indicate valve data and ratings.

C. Shop Drawings: Indicate pipe materials used, jointing methods, supports, and floor and wall penetration seals. Indicate installation, layout, weights, mounting and support details, and piping connections.

D. Manufacturer's Qualification Statement.

E. Installer's Qualification Statement.

F. Project Record Documents: Record actual locations of components and tag numbering.

G. Operation and Maintenance Data: Include installation instructions and spare parts lists.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section.
1. Minimum three years experience.

C. Comply with FM (AG) and UL (DIR) requirements.

D. Valves: Bear FM (AG) and UL (DIR) product listing label or marking. Provide manufacturer's name and pressure rating marked on valve body.

E. Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated.

F. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store valves in shipping containers, with labeling in place.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

PART 2 PRODUCTS

2.1 FIRE PROTECTION SYSTEMS

A. Sprinkler Systems: Comply with NFPA 13.

B. Welding Materials and Procedures: Comply with ASME BPVC-IX.

2.2 ABOVE GROUND PIPING

A. Steel Pipe: black.
1. Steel Fittings: ASTM B16.9 Wrought Steel Fittings.
2. Cast Iron Fittings: ASME B16.1, flanges and flanged fittings and ASME B16.4, threaded fittings.
3. Malleable Iron Fittings: ASME B16.3, threaded fittings and ASTM A47/A47M.
4. Mechanical Grooved Couplings: Malleable iron housing clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.

2.3 PIPE SLEEVES

A. Plastic, Sheet Metal, or Moisture-Resistant Fiber: Pipe passing through interior walls, partitions, and floors, unless steel or brass sleeves are specified below.

B. Not required for wall hydrants for fire department connections or in drywall construction.

2.4 ESCUTCHEONS

A. Manufacturers:
1. Fire Protection Products, Inc: www.fppi.com/#sle.com/#sle.
2. Tyco Fire Protection Products: www.tyco-fire.com/#sle.
3. Viking Group Inc: www.vikinggroupinc.com/#sle.

B. Material:
1. Fabricate from nonferrous metal.
2. Chrome-plated.
3. Metals and Finish: Comply with ASME A112.18.1.

C. Construction:
1. One-piece for mounting on chrome-plated tubing or pipe and type elsewhere.
2. Internal spring tension devices or setscrews to maintain a fixed position against a surface.

2.5 PIPE HANGERS AND SUPPORTS

A. Hangers for Pipe Sizes 1/2 to 1-1/2 inch (15 to 40 mm): Malleable iron, adjustable swivel, split ring.

B. Hangers for Pipe Sizes 2 inches (50 mm) and Over: Carbon steel, adjustable, clevis.

C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.

D. Wall Support for Pipe Sizes to 3 inches (80 mm): Cast iron hook.

E. Wall Support for Pipe Sizes 4 inches (100 mm) and Over: Welded steel bracket and wrought steel clamp.

2.6 MECHANICAL COUPLINGS

A. Manufacturers:

1. Anvil International: www.anvilintl.com/#sle.
2. Shurjoint Piping Products, Inc: www.shurjoint.com/#sle.
3. Tyco Fire Protection Products: www.tyco-fire.com/#sle.
4. Victaulic Company; FireLock Style 009H: www.victaulic.com/#sle.
5. Or equal

B. Rigid Mechanical Couplings for Grooved Joints:
1. Dimensions and Testing: Comply with AWWA C606.
2. Minimum Working Pressure: 300 psig (2065 kPa).
3. Housing Material: Fabricate of ductile iron complying with ASTM A536.
4. Housing Coating: Factory applied .
5. Gasket Material: EPDM suitable for operating temperature range from minus 30 degrees F (minus 34 degrees C) to 230 degrees F (110 degrees C).
6. Bolts and Nuts: Hot-dipped-galvanized or zinc-electroplated steel.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and foreign material, from inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.2 PIPE SCHEDULE

A. Sprinkler Piping to be as follows:
1. 1-1/2" and smaller: Schedule 40 steel pipe, with threaded ends and fittings.
2. 1-1/2" to 6": Schedule 40 or Schedule 10 steel pipe with threaded or rolled grooved ends, threaded or grooved end fittings and joints. Do not thread schedule 10 pipe.

3.3 INSTALLATION

A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.

B. Route piping in orderly manner, plumb and parallel to building structure. Maintain gradient.

C. Install piping to conserve building space, to not interfere with use of space and other work.

D. Group piping whenever practical at common elevations.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Pipe Hangers and Supports:
1. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
2. Place hangers within 12 inches (300 mm) of each horizontal elbow.
3. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
4. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
5. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.

G. Slope piping and arrange systems to drain at low points. Use eccentric reducers to maintain top of pipe level.

H. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.

I. Provide sleeves when penetrating footings, floors, walls, and partitions. Seal pipe including sleeve penetrations to achieve fire resistance equivalent to fire separation required.
   1. All Rated Openings: Caulk tight with firestopping material complying with ASTM E814 in accordance with Section 078400 to prevent the spread of fire, smoke, and gases.

J. Escutcheons:
   1. Install and firmly attach escutcheons at piping penetrations into finished spaces.
   2. Provide escutcheons on both sides of partitions separating finished areas through which piping passes.
   3. Attach plates at the underside only of suspended ceilings.
   4. Use chrome plated escutcheons in occupied spaces and to conceal openings in construction.

K. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, unions, and couplings for servicing are consistently provided.

3.4 CLEANING

A. Upon completion of work, clean all parts of the installation.

B. Clean equipment, pipes, valves, and fittings of grease, metal cuttings, and sludge that may have accumulated from the installation and testing of the system.

END OF SECTION 210500

SECTION 211300 - FIRE-SUPPRESSION SPRINKLER SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Wet-pipe sprinkler system.

B. System design, installation, and certification.

1.3 RELATED REQUIREMENTS

A. Section 078413 - Penetration Firestopping.

B. Section 210500 - Common Work Results for Fire Suppression: Pipe and fittings.

1.4 REFERENCE STANDARDS

A. FM (AG) - FM Approval Guide current edition.

B. NFPA 13 - Standard for the Installation of Sprinkler Systems Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. UL (DIR) - Online Certifications Directory Current Edition.

D. UL 405 - Standard for Safety Fire Department Connection Devices Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.

C. Delegated Design Submittal: For wet pipe sprinkler systems indicated to comply with perfromance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for thier preparation.

D. Shop Drawings:
   1. Submit preliminary layout of finished ceiling areas indicating only sprinkler locations coordinated with ceiling installation.
   2. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components, and accessories. Indicate system controls.
   3. Submit shop drawings to Authorities Having Jurisdiction and architect for approval. Submit proof of approval to Architect.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Sprinklers: Type and size matching those installed in quantity required by referenced NFPA design and installation standard.
3. Sprinkler Wrenches: For each sprinkler type.

I. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.

1.6 QUALITY ASSURANCE

A. Comply with FM (AG) requirements.

B. Designer Qualifications: Design system under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

D. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years experience and approved by manufacturer.

E. Equipment and Components: Provide products that bear FM (AG) label or marking.

F. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Sprinklers, Valves, and Equipment:
1. Anvil International: www.anvilintl.com/#sle.
2. Tyco Fire Protection Products: www.tyco-fire.com/#sle.
3. Viking Corporation: www.vikinggroupinc.com/#sle.
4. Reliable
5. Substitutions: See Section 016000 - Product Requirements.

2.2 SPRINKLER SYSTEM

A. Sprinkler System: Provide coverage for building areas noted.

B. Occupancy: Light hazard and ordinary hazard; comply with NFPA 13, refer to drawings.

C. Water Supply: Determine volume and pressure from water flow test data.

D. Storage Cabinet for Spare Sprinklers and Tools: Steel, located adjacent to alarm valve.

E. Pipe Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:

1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.

2.3 SPRINKLERS

A. Suspended Ceiling Type: Semi-recessed pendant type with matching push on escutcheon plate.
1. Response Type: Quick.
2. Coverage Type: Standard.
3. Finish: Chrome plated.
4. Escutcheon Plate Finish: Chrome plated.
5. Fusible Link: Glass bulb type temperature rated for specific area hazard.

B. Exposed Area Type: Upright type.
1. Response Type: Quick.
2. Coverage Type: Standard.
3. Finish: Brass.
4. Fusible Link: Glass bulb type temperature rated for specific area hazard.

C. Flexible Drop System: Stainless steel, multiple use, open gate type.
1. Application: Use to properly locate sprinkler heads.
2. Include all supports and bracing.
3. Provide braided type tube as required for the application.
4. Manufacturers:

2.4 PIPING SPECIALTIES

A. Backflow Preventer: Reduced pressure principle valve assembly backflow preventer with drain and OS & Y gate valve on each end. To be provided as an Alternate.

B. Test Connections:
1. Backflow Preventer Test Connection:
a. Provide downstream of the backflow prevention assembly, listed hose valves with 2.5 inch (65 mm) National Standard male hose threads with cap and chain. Only provided as an Alternate with the RPZ Backflow Preventer.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with referenced NFPA design and installation standard.

B. Install equipment in accordance with manufacturer's instructions.

C. Provide approved backflow preventer assembly at sprinkler system water source connection.

D. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.

E. Place pipe runs to minimize obstruction to other work.

F. Place piping in concealed spaces above finished ceilings.

G. Apply masking tape or paper cover to ensure concealed sprinklers, cover plates, and sprinkler escutcheons do not receive field paint finish. Remove after painting. Replace painted sprinklers.

H. Flush entire piping system of foreign matter.

I. Hydrostatically test entire system.

J. Require test be witnessed by Fire Code Offic.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Ensure required devices are installed and connected as required to fire alarm system.

END OF SECTION 211300

MONTGOMERY COUNTY NY

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DIVISION 22

Plumbing

SECTION 220519 - METERS AND GAUGES FOR PLUMBING PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Pressure Gauges:
   1. Bourdon tube for liquids and gases.

B. Thermometers.

C. Pressure-Temperature test plugs.

1.3 REFERENCE STANDARDS

A. ASME B40.100 - Pressure Gauges and Gauge Attachments 2013.

B. ASTM E1 - Standard Specification for ASTM Liquid-in-Glass Thermometers 2014 (Reapproved 2020).

C. NSF 61 - Drinking Water System Components - Health Effects 2020.

D. NSF 372 - Drinking Water System Components - Lead Content 2020.

1.4 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide red-marked product data sheets for each furnished item with associated components and accessories.

PART 2 PRODUCTS

2.1 PRESSURE GAUGES

A. Bourdon Tube for Liquids and Gases:
   1. Dial Size and Cover: 4-1/2 inch (115 mm) diameter scale with polycarbonate window.
   2. Dial Text and Markings: Black color on white background with scaled kPa and psi units.
   3. Accuracy: ASME B40.100, adjustable commercial grade (D) with 5 percent of span.
   4. Process Connection: Lower-back, 1/4 inch (6.35 mm) NPT male except where noted.

2.2 THERMOMETERS

A. General:
   1. Product Compliance: ASTM E1.
   2. Lens: Clear glass, except where stated.
   3. Accuracy: One percent, when tested in accordance with ASTM E77, except where stated.
   4. Scale: Black markings depicting single scale in degrees F where expected process value falls half-span of standard temperature range.

B. Thermometers - Adjustable Angle: 7 inch (177.8 mm) v-shape aluminum case with clear glass window scale, 6 inch (152.4 mm) NPT stem, red or blue organic non-toxic liquid filled glass tube, and adjustable joint with positive locking device allowing 360 degrees in horizontal plane or 180 degrees in vertical plane adjustments.

2.3 PRESSURE-TEMPERATURE TEST PLUGS:

A. Size: 500 psi (34.5 bar) capacity; 1/2 inch (13 mm) MPT brass fitting with gasket, cap, and retaining strap for 1/8 inch (3 mm) pressure gauge or temperature probe.

B. Wetted Materials per Temperature Range:
1. Up to 200 degrees F (93 degrees C): Brass probe with neoprene core.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install metering products in accordance with manufacturer's instructions for intended fluid type and service.

B. Install pressure gauges as follows:
1. At Pumps: Place single gauge before strainer, suction side and discharge side.
2. Include gauge cock to isolate each gauge and extend nipples for insulation clearance.

C. Install thermometers as follows:
1. Hot Water Heaters: Place upstream and downstream of heater. Add one on the inlet end when using steam as the water heating medium.

END OF SECTION 220519

SECTION 220523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Ball valves.

B. Check valves.

C. Flow limiting valves.

1.3 RELATED REQUIREMENTS

A. Section 220553 - Identification for Plumbing Piping and Equipment.

B. Section 220719 - Plumbing Piping Insulation.

C. Section 221005 - Plumbing Piping.

1.4 ABBREVIATIONS AND ACRONYMS

A. CWP: Cold working pressure.

B. EPDM: Ethylene propylene copolymer rubber.

C. PTFE: Polytetrafluoroethylene.

1.5 REFERENCE STANDARDS

A. MSS SP-80 - Bronze Gate, Globe, Angle, and Check Valves 2019.

B. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends 2010, with Errata .

C. NSF 61 - Drinking Water System Components - Health Effects 2020.

D. NSF 372 - Drinking Water System Components - Lead Content 2020.

1.6 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide data on valves including manufacturers catalog information. Submit performance ratings, rough-in details, weights, support requirements, and piping connections.

C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts listings.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Use the following precautions during storage:
1. Maintain valve end protection and protect flanges and specialties from dirt.
a. Provide temporary inlet and outlet caps.
b. Maintain caps in place until installation.
2. Store valves in shipping containers and maintain in place until installation.
a. Store valves indoors in dry environment.
b. Store valves off the ground in watertight enclosures when indoor storage is not an option.

PART 2 PRODUCTS

2.1 APPLICATIONS

A. Listed pipe sizes shown using nominal pipe sizes (NPS) and nominal diameter (DN).

B. Provide the following valves for the applications if not indicated on drawings:
1. Shutoff: Ball.

C. Substitutions of valves with higher CWP classes or WSP ratings for same valve types are permitted when specified CWP ratings or WSP classes are not available.

D. Domestic, Hot and Cold Water Valves:
1. 2 inch (50 mm, DN) and Smaller:
a. Bronze: Provide with solder-joint or threaded ends.
b. Bronze Angle: Class 125, bronze disc.
c. Ball: Two piece, full port, bronze with bronze trim.
d. Bronze Swing Check: Class 125, bronze disc.

2.2 GENERAL REQUIREMENTS

A. Valve Pressure and Temperature Ratings: No less than rating indicated; as required for system pressures and temperatures.

B. Valve Sizes: Match upstream piping unless otherwise indicated.

C. Valve Actuator Types:
1. Hand Lever: Quarter-turn valves 6 inch (150 mm, DN) and smaller except plug valves.

D. Insulated Piping Valves: With 2 inch (50 mm, DN) stem extensions and the following features:
1. Ball Valves: Extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.

E. Potable Water Use:
1. Certified: Approved for use in compliance with NSF 61 and NSF 372.
2. Lead-Free Certified: Wetted surface material includes less than 0.25 percent lead content.

F. Source Limitations: Obtain each valve type from a single manufacturer.

2.3 BRONZE, BALL VALVES

A. General:
1. Fabricate from dezincification resistant material.

2. Copper alloys containing more than 15 percent zinc are not permitted.

B. Two Piece, Full Port with Stainless Steel Trim:
1. Comply with MSS SP-110.
2. WSP Rating: 150 psi (1,035 kPa).
3. WOG Rating: 600 psi (4,140 kPa).
4. Body: Forged bronze or dezincified-brass alloy.
5. Ends Connections: Pipe press, thread, or solder.
6. Seats: PTFE.
7. Stem: Stainless steel, blowout proof.
8. Ball: Stainless steel, vented.
9. Operator: Provide stem extension.

2.4 BRONZE, LIFT CHECK VALVES

A. General:
1. Fabricate from dezincification resistant material.
2. Copper alloys containing more than 15 percent zinc are not permitted.

B. Class 125:
1. Comply with MSS SP-80, Type 1, Metal Disc to Metal Seat and Type 2, Nonmetallic Disc to Metal Seat.
2. CWP Rating: 200 psi (1,380 kPa).
3. Design: Vertical flow.
4. Body: Comply with ASTM B61 or ASTM B62, bronze.
5. End Connections: Threaded.
6. Disc (Type 1): Bronze.

2.5 BRONZE, SWING CHECK VALVES

A. General:
1. Fabricate from dezincification resistant material.
2. Copper alloys containing more than 15 percent zinc are not permitted.

B. Class 125:
1. Pressure and Temperature Rating: MSS SP-80, Type 3.
2. Design: Y-pattern, horizontal or vertical flow.
3. WOG Rating: 200 psi (1,380 kPa).
4. Body: Bronze, ASTM B62.
5. End Connections: Threaded or soldered.
6. Disc: Bronze.

2.6 FLOW LIMITING VALVES

A. Size: As indicated on drawings.

B. Flow Setting: As indicated on drawings.

C. Flow Accuracy: Plus or minus 5 percent.

D. Body and Cap: Lead-free brass.

E. Cap and Plug: Lead-free brass.

F. Cartridge: Stainless steel with replaceable EPDM seal.

G. Maximum Service Pressure: 600 psi (4,137 kPa), WOG.

H. Maximum Service Temperature: 250 degrees F (121.1 degrees C).

PART 3 EXECUTION

3.1 EXAMINATION

A. Discard all packing materials and verify that valve interior, including threads and flanges are completely clean without signs of damage or degradation that could result in leakage.

B. Verify valve parts to be fully operational in all positions from closed to fully open.

C. Confirm gasket material to be suitable for the service, to be of correct size, and without defects that could compromise effectiveness.

D. Should valve is determined to be defective, replace with new valve.

3.2 INSTALLATION

A. Provide unions or flanges with valves to facilitate equipment removal and maintenance while maintaining system operation and full accessibility for servicing.

B. Provide separate valve support as required and locate valve with stem at or above center of piping, maintaining unimpeded stem movement.

C. Install check valves where necessary to maintain direction of flow as follows:
   1. Lift Check: Install with stem plumb and vertical.
   2. Swing Check: Install horizontal maintaining hinge pin level.

END OF SECTION 220523

SECTION 220529 - HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Support and attachment components.

1.3 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.

C. ASTM A181/A181M - Standard Specification for Carbon Steel Forgings, for General - Purpose Piping 2014 (Reapproved 2020).

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

E. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.

F. MFMA-4 - Metal Framing Standards Publication 2004.

G. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018 (Amendent 2019).

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
   2. Coordinate the work with other trades to provide additional framing and materials required for installation.
   3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
   4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
   5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured.

1.5 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets.

1.6 QUALITY ASSURANCE

A. Comply with applicable building code.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.
   1. Design supports for multiple pipes, including pipe stand, capable of supporting combined weight of supported systems, system contents, and test water.
   2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

2.2 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.
   2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
   3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported.
   4. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
   5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
      a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
      b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
      c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
      d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Hanger Rods:
   1. Threaded zinc-plated steel unless otherwise indicated.
   2. Minimum Size, Unless Otherwise Indicated or Required:
      a. Equipment Supports: 1/2 inch (13 mm, DN) diameter.
      b. Piping up to 1 inch (25 mm, DN): 1/4 inch (6 mm, DN) diameter.
      c. Piping larger than 1 inch (25 mm, DN): 3/8 inch (10 mm, DN) diameter.

d. Trapeze Support for Multiple Pipes: 3/8 inch (10 mm) in length.

C. Pipe Supports:
1. Material: ASTM A395/A395M ductile iron, ASTM A36/A36M carbon steel, ASTM A47/A47M malleable iron, ASTM A181/A181M forged steel, or ASTM A283/A283M steel.
2. Liquid Temperatures Up To 122 degrees F (50 degrees C):
a. Overhead Support: MSS SP-58 Types 1, 3 through 12 clamps.
b. Support From Below: MSS SP-58 Types 35 through 38.
3. Operating Temperatures from 122 to 446 degrees F (50 to 230 degrees C):
a. Overhead Support: MSS SP-58 Type 1 or 3 through 12 clamps with appropriate saddle of MSS SP-58 Type 40 for insulated pipe.

D. Pipe Stanchions:
1. Material: Malleable iron, ASTM A47/A47M; or carbon steel, ASTM A36/A36M.
2. Provide coated or plated saddles to isolate steel hangers from dissimilar metal tube or pipe.

E. Beam Clamps:
1. MSS SP-58 types 19 through 23, 25 or 27 through 30 based on required load.
2. Beam C-Clamp: MSS SP-58 type 23, malleable iron and steel with plain, stainless steel, and zinc finish.
3. Small or Junior Beam Clamp: MSS SP-58 type 19, malleable iron with plain finish. For inverted usage provide manufacturer listed size(s).
4. Wide Mouth Beam Clamp: MSS SP-58 type 19, malleable iron with plain finish.
5. Centerload Beam Clamp with Extension Piece: MSS SP-58 type 30, malleable iron with plain finish.
6. Provide clamps with hardened steel cup-point set screws and lock-nuts for anchoring in place.
7. Material: ASTM A395/A395M ductile iron, ASTM A36/A36M carbon steel, ASTM A47/A47M malleable iron, ASTM A181/A181M forged steel, or ASTM A283/A283M steel.

F. Riser Clamps:
1. For insulated pipe runs, provide two bolt-type clamps designed for installation under insulation.
2. MSS SP-58 type 1 or 8, carbon steel or steel with epoxy plated, plain, stainless steel, or zinc plated finish.

G. Offset Pipe Clamps: Double-leg design two-piece pipe clamp.

H. Strut Clamps:
1. Pipe Clamp: Two-piece rigid, universal, or outer diameter type, carbon steel with epoxy copper or zinc finish.

I. Insulation Clamps:
1. Two bolt-type clamps designed for installation under insulation.
2. Material: Carbon steel with epoxy copper or zinc finish.

J. Pipe Hangers:
1. Hangers:
a. Provide hinged split ring and yoke roller hanger with epoxy copper or plain finish.
b. Material: ASTM A47/A47M malleable iron or ASTM A36/A36M carbon steel.
c. Provide hanger rod and nuts of the same type and material for a given pipe run.
d. Provide coated or plated hangers to isolate steel hangers from dissimilar metal tube or pipe.
2. Clevis Hangers, Adjustable:
a. Copper Tube: MSS SP-58 Type 1, epoxy-plated copper.
b. Standard-Duty: MSS SP-58 Type 1, zinc-colored, epoxy plated.

K. Dielectric Barriers: Provide between metallic supports and metallic piping and associated items of dissimilar type; acceptable dielectric barriers include rubber or plastic sheets or coatings attached securely

to pipe or item.

L. Nonpenetrating Rooftop Supports for Low-Slope Roofs:
1. Provide steel pedestals with thermoplastic or rubber base that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified.
2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
3. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports.
4. Mounting Height: Provide minimum clearance of 6 inches (150 mm) under supported component to top of roofing.

M. Pipe Shields for Insulated Piping:
1. MSS SP-58 Type 40, ASTM A1011/A1011M steel or ASTM A653/A653M carbon steel.
2. General Construction and Requirements:
a. Surface Burning Characteristics: Comply with ASTM E84 or UL 723.
b. Shields Material: UV-resistant polypropylene with glass fill.
c. Maximum Insulated Pipe Outer Diameter: 12-5/8 inch (321 mm).
d. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
e. Maximum Service Temperature: 178 degrees F (81 degrees C).
f. Pipe shields to be provided at hanger, support, and guide locations on pipe requiring insulation or additional support.

N. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Hollow Masonry: Use toggle bolts.
5. Hollow Stud Walls: Use toggle bolts.
6. Steel: Use beam ceiling clamps, beam clamps, machine bolts, or welded threaded studs.
7. Beam Ceiling Flanges: ASTM A47/A47M Grade 32510, malleable iron or stainless steel with copper, plain, stainless steel, or zinc finish.
8. Sheet Metal: Use sheet metal screws.
9. Wood: Use wood screws.
10. Plastic and lead anchors are not permitted.
11. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
a. Comply with MFMA-4.
b. Channel Material: Use galvanized steel.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 APPLICATION

A. Comply with requirements in Section 078413 "Penetratio Firestopping" for firestopping materials and installation, for pentrations through fire-rated walls, ceilings and assemblies.

B. Strenght of Support Assemblies: Where not indicated, select sizes of components, so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components pluss 200 lb. (90 kg).

3.3 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.

C. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

D. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

E. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

F. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

G. Equipment Support and Attachment:
   1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
   2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
   5. Install lateral bracing with pipe hangers and supports to prevent swaying.

H. Secure fasteners according to manufacturer's recommended torque settings.

I. Remove temporary supports.

3.4 FIELD QUALITY CONTROL

A. Inspect support and attachment components for damage and defects.

B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

C. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION 2205

SECTION 220553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Nameplates.

B. Tags.

C. Pipe markers.

D. Ceiling tacks.

1.3 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems 2020.

1.4 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Schedules:
   1. Submit plumbing component identification schedule listing equipment, piping, and valves.
   2. Detail proposed component identification data in terms of of wording, symbols, letter size, and color coding to be applied to corresponding product.
   3. Valve Data Format: Include id-number, location, function, and model number.

C. Product Data: Provide manufacturers catalog literature for each product required.

D. Manufacturer's Installation Instructions: Indicate special procedures, and installation.

E. Project Record Documents: Record actual locations of tagged valves.

PART 2 PRODUCTS

2.1 PLUMBING COMPONENT IDENTIFICATION GUIDELINE

A. Nameplates:
   1. Heat exchangers, water heaters, and other heat transfer products.
   2. Pumps, tanks, filters, water treatment devices, and other plumbing equipment products.

B. Pipe Markers: 3/4 inch (20 mm) diameter and higher.

2.2 NAMEPLATES

A. Description: Laminated piece with up to three lines of text.
   1. Letter Color: White.

2. Letter Height: 1/4 inch (6 mm).
3. Background Color: Black.

2.3 TAGS

A. Metal: Brass, 19 gauge 1-1/2 inch (40 mm) in diameter with smooth edges, blank, smooth edges, and corrosion-resistant ball chain. Up to three lines of text.

B. Valve Tag Chart: Typewritten 12-point letter size list in anodized aluminum frame.

2.4 PIPE MARKERS

A. Comply with ASME A13.1.

B. Flexible Marker: Factory fabricated, semi-rigid, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid conveyed.

C. Flexible Tape Marker: Flexible, vinyl film tape with pressure-sensitive adhesive backing and printed markings.

D. Identification Scheme, ASME A13.1:

2.5 CEILING TACKS

A. Description: Steel with 3/4 inch (20 mm) diameter color coded head.

B. Color code as follows:
1. Plumbing Equipment: Green.
2. Plumbing Valves: Green.

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive identification products.

3.2 INSTALLATION

A. Install flexible nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags in clear view and align with axis of piping

C. Install plastic pipe markers in accordance with manufacturer's instructions.

D. Install plastic tape pipe marker around pipe in accordance with manufacturer's instructions.

E. Locate ceiling tacks to locate valves or dampers above lay-in panel ceilings. Locate in corner of panel closest to equipment.

END OF SECTION 220523

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Cellular glass insulation.

B. Flexible elastomeric cellular insulation.

C. Glass fiber insulation.

D. Jacketing and accessories.

1.3 RELATED REQUIREMENTS

A. Section 221005 - Plumbing Piping: Placement of hangers and hanger inserts.

1.4 REFERENCE STANDARDS

A. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement 2007 (Reapproved 2019).

B. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form 2020a.

C. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation 2019.

D. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2021a.

E. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

G. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum 2 years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 GLASS FIBER INSULATION

A. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (Ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.

B. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
1. K (Ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 650 degrees F (343 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.

C. Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm inch (0.029 ng/(Pa s m)).

D. Tie Wire: 0.048 inch (1.22 mm) stainless steel with twisted ends on maximum 12 inch (300 mm) centers.

E. Vapor Barrier Lap Adhesive: Compatible with insulation.

F. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.

G. Fibrous Glass Fabric:

H. Indoor Vapor Barrier Finish:
1. Cloth: Untreated; 9 oz/sq yd (305 g/sq m) weight.
2. Vinyl emulsion type acrylic, compatible with insulation, black color.

2.3 CELLULAR GLASS INSULATION

A. Insulation: ASTM C552, Type II, Grade 6.
1. K (Ksi) Value: 0.35 (0.050) at 100 degrees F (38 degrees C).
2. Service Temperature Range: From 250 degrees F (121 degrees C) to 800 degrees F (427 degrees C).
3. Water Vapor Permeability: 0.005 perm inch (0.007 ng/(Pa s m)) maximum per inch.
4. Water Absorption: 0.5 percent by volume, maximum.

2.4 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
   1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
   2. Maximum Service Temperature: 220 degrees F (104 degrees C).
   3. Connection: Waterproof vapor barrier adhesive.

B. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that piping has been tested before applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.

C. Exposed Piping: Locate insulation and cover seams in least visible locations.

D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, pump bodies, and expansion joints.

E. Install cellular melamine with factory-applied jackets with a manufacturer-approved adhesive along seams, both straight lap joints and circumferential lap joints.
   1. Install seal over seams with factory-approved room temperature vulcanization (RTV) silicone sealant to ensure a positive vapor barrier seal in outdoor and sanitary washdown environments.

F. Glass fiber insulated pipes conveying fluids below ambient temperature:
   1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
   2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.

G. Glass fiber insulated pipes conveying fluids above ambient temperature:
   1. Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples.
   2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.

H. Inserts and Shields:
   1. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.

I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, see Section 078400.

3.3 SCHEDULES

A. Plumbing Systems:
   1. Domestic Hot Water Supply:
   2. Domestic Hot Water Recirculation:
   3. Domestic Cold Water:

END OF SECTION 220719

SECTION 221005 - PLUMBING PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Sanitary waste piping, buried within 5 feet (1500 mm) of building.

B. Sanitary waste piping, above grade.

C. Domestic water piping, buried within 5 feet (1500 mm) of building.

D. Domestic water piping, above grade.

E. Storm drainage piping, buried within 5 feet (1500 mm) of building.

F. Storm drainage piping, above grade.

G. Natural gas piping, buried within 5 feet (1500 mm) of building.

H. Natural gas piping, above grade.

I. Pipe flanges, unions, and couplings.

J. Pipe hangers and supports.

K. Pipe sleeve-seal systems.

L. Ball valves.

M. Balancing valves.

N. Pressure reducing valves.

O. Strainers.

1.3 RELATED REQUIREMENTS

A. Section 220529 - Hangers and Supports for Plumbing Piping and Equipment.

B. Section 220553 - Identification for Plumbing Piping and Equipment.

C. Section 220719 - Plumbing Piping Insulation.

1.4 REFERENCE STANDARDS

A. ANSI Z223.1 - National Fuel Gas Code 2021.

B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings 2018.

C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.

D. ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV 2017.

E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.

F. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings 2021.

G. ASTM B32 - Standard Specification for Solder Metal 2020.

H. ASTM B42 - Standard Specification for Seamless Copper Pipe, Standard Sizes 2020.

I. ASTM B88 - Standard Specification for Seamless Copper Water Tube 2020.

J. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric) 2020.

K. ASTM B306 - Standard Specification for Copper Drainage Tube (DWV) 2020.

L. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings 2020a.

M. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 2021a.

N. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 2021.

O. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems 2020.

P. ASTM D2665 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings 2020.

Q. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings 2017.

R. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets 2020.

S. AWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings 2017.

T. AWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast 2017, with Errata (2018).

U. AWWA C651 - Disinfecting Water Mains 2014.

V. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications 2017 (Revised 2018).

W. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications 2012 (Revised 2018).

X. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018.

Y. NSF 61 - Drinking Water System Components - Health Effects 2020.

Z. NSF 372 - Drinking Water System Components - Lead Content 2020.

1.5 SUBMITTALS

A. See Sectrion 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

C. Welders' Certificates: Submit certification of welders' compliance with ASME BPVC-IX.

D. Shop Drawings: For non-penetrating rooftop supports, submit detailed layout developed for this project, with design calculations for loadings and spacings.

E. Project Record Documents: Record actual locations of valves.

1.6 INFORMATIONAL SUBMITTALS

A. Coordiantion Drawings: Piping layout, drawn to scale, showing the items described in this Section, and coordinated with all building trades.

B. System purging and disinfecting activities reports.

C. Field quality-control reports.

1.7 QUALITY ASSURANCE

A. Perform work in accordance with applicable codes.

B. Valves: Manufacturer's name and pressure rating marked on valve body.

C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.

D. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.9 FIELD CONDITIONS

A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

B. Plenum-Installed Acid Waste Piping: Flame-spread index equal or below 25 and smoke-spread index equal or below 50 according to ASTM E84 or UL 723 tests.

2.2 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING

A. Cast Iron Pipe: ASTM A74 extra heavy weight.
1. Fittings: Cast iron.
2. Joints: Hub-and-spigot, CISPI HSN compression type with ASTM C564 neoprene gaskets or lead and oakum.

B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.3 SANITARY WASTE PIPING, ABOVE GRADE

A. Cast Iron Pipe: CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

B. Copper Tube: ASTM B306, DWV.
1. Fittings: ASME B16.29, wrought copper, or ASME B16.23, sovent.
2. Joints: ASTM B32, alloy Sn50 solder.

C. PVC Pipe: ASTM D2665.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.4 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING

A. Copper Pipe: ASTM B42, hard drawn.
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22 wrought copper and bronze.

B. Ductile Iron Pipe: AWWA C151/A21.51.
1. Fittings: Ductile or gray iron, standard thickness.
2. Joints: AWWA C111/A21.11, styrene butadiene rubber (SBR) or vulcanized SBR gasket with 3/4 inch (19 mm) diameter rods.

C. Cross-Linked Polyethylene (PEX) Pipe: ASTM F876 or ASTM F877.
1. PPI TR-4 Pressure Design Basis:

2.5 DOMESTIC WATER PIPING, ABOVE GRADE

A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Mechanical Press Sealed Fittings: Double-pressed type, NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.

2.6 STORM DRAINAGE PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING

A. Cast Iron Pipe: ASTM A74 extra heavy weight.
1. Fittings: Cast iron.

2. Joint Seals: ASTM C564 neoprene gaskets, or lead and oakum.

B. PVC Pipe: ASTM D2665 or ASTM D3034.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.7 STORM DRAINAGE PIPING, ABOVE GRADE

A. Cast Iron Pipe: CISPI 301, hubless, service weight.
1. Fittings: Cast iron.
2. Joints: Neoprene gaskets and stainless steel clamp-and-shield assemblies.

B. PVC Pipe: ASTM D2665.
1. Fittings: PVC.
2. Joints: Solvent welded, with ASTM D2564 solvent cement.

2.8 NATURAL GAS PIPING, BURIED WITHIN 5 FEET (1500 mm) OF BUILDING

A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASTM A234/A234M, wrought steel welding type.
2. Joints: ASME B31.1, welded.
3. Jacket: AWWA C105/A21.5 polyethylene jacket or double layer, half-lapped 10 mil (0.25 mm) polyethylene tape.

2.9 NATURAL GAS PIPING, ABOVE GRADE

A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
2. Joints: Threaded or welded to ASME B31.1.

2.10 PIPE FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 inch (80 mm, DN) and Under:

B. No-Hub Couplings:
1. Gasket Material: Neoprene complying with ASTM C564.
2. Band Material: Stainless steel.
3. Eyelet Material: Stainless steel.

C. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.11 PIPE HANGERS AND SUPPORTS

A. See Section 220529 for additional requirements.

B. Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
3. Trapeze Hangers: Welded steel channel frames attached to structure.
4. Vertical Pipe Support: Steel riser clamp.
5. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.

6. Rooftop Supports for Low-Slope Roofs: Steel pedestals with bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified; and as follows:
   a. Bases: High-density polypropylene.
   b. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   c. Steel Components: Stainless steel or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   d. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports; corrosion-resistant material.
   e. Height: Provide minimum clearance of 6 inches (150 mm) under pipe to top of roofing.

C. Plumbing Piping - Drain, Waste, and Vent:
1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch (15 to 40 mm, DN): Malleable iron, adjustable swivel, split ring.
2. Hangers for Pipe Sizes 2 inch (50 mm, DN) and Over: Carbon steel, adjustable, clevis.
3. Wall Support for Pipe Sizes to 3 inch (80 mm, DN): Cast iron hook.
4. Wall Support for Pipe Sizes 4 inch (100 mm, DN) and Over: Welded steel bracket and wrought steel clamp.
5. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
6. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

D. Plumbing Piping - Water:
1. Hangers for Pipe Sizes 1/2 to 1-1/2 inch (15 to 40 mm, DN): Malleable iron, adjustable swivel, split ring.
2. Hangers for Cold Pipe Sizes 2 inch (50 mm, DN) and Over: Carbon steel, adjustable, clevis.
3. Hangers for Hot Pipe Sizes 2 to 4 inch (50 to 100 mm, DN): Carbon steel, adjustable, clevis.
4. Hangers for Hot Pipe Sizes 6 inch (150 mm, DN) and Larger: Adjustable steel yoke, cast iron pipe roll, double hanger.
5. Wall Support for Pipe Sizes Up to 3 inch (80 mm, DN): Cast iron hook.
6. Wall Support for Pipe Sizes 4 inch (100 mm, DN) and Larger: Welded steel bracket and wrought steel clamp.
7. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
8. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

2.12 PIPE SLEEVE-SEAL SYSTEMS

A. Modular Mechanical Seals:
1. Elastomer-based interlocking links continuously fill annular space between pipe and wall-sleeve, wall or casing opening.
2. Watertight seal between pipe and wall-sleeve, wall or casing opening.
3. Size and select seal component materials in accordance to service requirements.

B. Wall Sleeve: Steel material with water-stop collar, and nailer end-caps.

2.13 BALL VALVES

A. Construction, 4 inch (100 mm, DN) and Smaller: MSS SP-110, Class 150, 400 psi (2760 kPa) CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle with balancing stops, threaded or grooved ends with union.

2.14 BALANCING VALVES

A. Construction: Class 125, brass or bronze body with union on inlet and outlet, temperature and pressure test plug on inlet and outlet, blowdown/backflush drain.

B. Calibration: Control flow within five percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum minimum pressure 3.5 psi (24 kPa).

2.15 PRESSURE REDUCING VALVES

A. 2 inch (50 mm, DN) and Smaller:
1. ASSE 1003, bronze body, stainless steel, and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded single union ends.
2. Pressure Reducing Pilot-Operator:
a. Operating Range: 5 to 50 psi (0.35 to 35 Bar).
b. Connected into brass or bronze pilot piping and fittings.
c. Fixed flow restrictor, pressure gauges, and isolation valves.

B. 2 inch (50 mm, DN) and Larger:
1. ASSE 1003, cast iron body with interior lining complying with AWWA C550, bronze fitted, elastomeric diaphragm and seat disc, flanged.

2.16 PRESSURE RELIEF VALVES

A. ANSI Z21.22, AGA certified, bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated.

2.17 STRAINERS

A. Size 1/2 inch (15 mm, DN) to 3 inch (80 mm, DN):
1. Class 150, threaded forged bronze Y-pattern body, stainless steel perforated mesh screen with cap, and rated for 150 psi (1,034 kPa), 250 deg F (121.1 deg C) WOG service.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.2 PREPARATION

A. Ream pipe and tube ends. Remove burrs.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom, conserve space, and not interfere with use of space.

E. Group piping whenever practical at common elevations.

F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

H. Provide access where valves and fittings are not exposed.

I. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.

J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc-rich primer to welding.

K. Provide support for utility meters in accordance with requirements of utility companies.

L. Prepare exposed, unfinished pipe, fittings, supports, and accessories for finish painting.

M. Install bell and spigot pipe with bell end upstream.

N. Install valves with stems upright or horizontal, not inverted. See Section 220523.

O. Install water piping to ASME B31.9.

P. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

Q. PVC Pipe: Make solvent-welded joints in accordance with ASTM D2855.

R. Sleeve pipes passing through partitions, walls, and floors.

S. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.9.
2. Support horizontal piping as indicated.
3. Install hangers to provide minimum 1/2 inch (15 mm) space between finished covering and adjacent work.
4. Place hangers within 12 inches (300 mm) of each horizontal elbow.
5. Use hangers with 1-1/2 inch (40 mm) minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
8. Provide copper plated hangers and supports for copper piping.
9. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
10. Support cast iron drainage piping at every joint.

T. Pipe Sleeve-Seal Systems:
1. Install manufactured sleeve-seal systems in sleeves located in grade slabs and exterior concrete walls at piping entrances into building.

2. Provide sealing elements of the size, quantity, and type required for the piping and sleeve inner diameter or penetration diameter.
3. Install in accordance with manufacturer's recommendations.

3.4 FIELD TESTS AND INSPECTIONS

A. Verify and inspect systems according to requirements by the Authority Having Jurisdiction.

B. Test Results: Document and certify successful results, otherwise repair, document, and retest.

3.5 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Prior to starting work, verify system is complete, flushed, and clean.

B. Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.

C. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

D. Maintain disinfectant in system for 24 hours.

E. If final disinfectant residual tests less than 25 mg/L, repeat treatment.

F. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

G. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from water entry, and analyze in accordance with AWWA C651.

3.6 SCHEDULES

A. Pipe Hanger Spacing:
1. Metal Piping:
   a. Pipe Size: 1/2 inch (15 mm, DN) to 1-1/4 inch (32 mm, DN):
      1) Maximum Hanger Spacing: 6.5 ft (2 m).
      2) Hanger Rod Diameter: 3/8 inches (9 mm).
   b. Pipe Size: 1-1/2 inch (40 mm, DN) to 2 inch (50 mm, DN):
      1) Maximum Hanger Spacing: 10 ft (3 m).
      2) Hanger Rod Diameter: 3/8 inch (9 mm).
   c. Pipe Size: 2-1/2 inch (65 mm, DN) to 3 inch (80 mm, DN):
      1) Maximum Hanger Spacing: 10 ft (3 m).
      2) Hanger Rod Diameter: 1/2 inch (13 mm).
   d. Pipe Size: 4 inch (100 mm, DN) to 6 inch (150 mm, DN):
      1) Maximum Hanger Spacing: 10 ft (3 m).
      2) Hanger Rod Diameter: 5/8 inch (15 mm).
   e. Pipe Size: 8 inch (200 mm, DN) to 12 inch (300 mm, DN):
      1) Maximum hanger spacing: 14 ft (4.25 m).
      2) Hanger Rod Diameter: 7/8 inch (22 mm).
2. Plastic Piping:
   a. All Sizes:
      1) Maximum Hanger Spacing: 6 ft (1.8 m).
      2) Hanger Rod Diameter: 3/8 inch (9 mm).

END OF SECTION 221005

SECTION 221006 - PLUMBING PIPING SPECIALTIES

PART 1 GENERAL

1.1 RELATED DOCUMENT

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Drains.

B. Cleanouts.

C. Backflow preventers.

D. Water hammer arrestors.

E. Air vents.

F. Floor drain trap seals.

1.3 RELATED REQUIREMENTS

A. Section 221005 - Plumbing Piping.

B. Section 223000 - Plumbing Equipment.

C. Section 224000 - Plumbing Fixtures.

1.4 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.

B. ASME A112.6.3 - Floor and Trench Drains 2019.

C. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers 2011.

D. NSF 2 - Food Equipment 2019.

E. NSF 61 - Drinking Water System Components - Health Effects 2020.

F. NSF 372 - Drinking Water System Components - Lead Content 2020.

G. PDI-WH 201 - Water Hammer Arresters 2017.

1.5 SUBMITTALS

A. See Section 13300 - Submittal procedures, for submittal procedures.

B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.

C. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.

D. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.

E. Manufacturer's qualification statement.

F. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

G. Project Record Documents: Record actual locations of equipment, cleanouts, backflow preventers, water hammer arrestors.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Accept specialties on site in original factory packaging. Inspect for damage.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.2 DRAINS

A. Floor Drains : Refer to Plumbing Schedule.
1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.

2.3 CLEANOUTS

A. Cleanouts: Refer to Plumbing Schedule.
1. Round cast nickel bronze access frame and non-skid cover.

2.4 BACKFLOW PREVENTERS

A. Reduced Pressure Backflow Preventer Assembly:
1. ASSE 1013 and NSF 61 compliant reinforced-nylon body and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve that opens under back pressure in case of diaphragm failure, integral male test fittings, and non-threaded vent outlet.

2.5 WATER HAMMER ARRESTORS

A. Water Hammer Arrestors:
1. Stainless steel construction, piston type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range minus 100 to 300 degrees F (minus 73 to 149 degrees C) and maximum 250 psi (1700 kPa) working pressure.

2.6 AIR VENTS

A. Float Type:
1. Brass or semi-steel body, copper, polypropylene, or solid non-metallic float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve.

2.7 FLOOR DRAIN TRAP SEALS

A. Description: Push-fit EPDM or silicone fitting with a one-way membrane.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.

C. Install floor cleanouts at elevation to accommodate finished floor.

D. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to quick closing plumbing fixtures.

END OF SECTION 221006

SECTION 223000 - PLUMBING EQUIPMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Water heaters.

B. Diaphragm-type compression tanks.

C. In-line circulator pumps.

1.3 REFERENCE STANDARDS

A. ASME BPVC-VIII-1 - Boiler and Pressure Vessel Code, Section VIII, Division 1: Rules for Construction of Pressure Vessels 2021.

B. ICC (IPC) - International Plumbing Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. NSF 61 - Drinking Water System Components - Health Effects 2020.

D. UL 1453 - Standard for Electric Booster and Commercial Storage Tank Water Heaters Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 13300 - Submittal Procedure, for submittals procedures.

B. Product Data:
   1. Provide dimension drawings of water heaters indicating components and connections to other equipment and piping.
   2. Indicate pump type, capacity, power requirements.
   3. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
   4. Provide electrical characteristics and connection requirements.

C. Operation and Maintenance Data: Include operation, maintenance, and inspection data, replacement part numbers and availability, and service depot location and telephone number.

D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

E. Project Record Documents: Record actual locations of components.

1.5 WARRANTY

A. Provide five year manufacturer warranty for domestic water heaters.

PART 2 PRODUCTS

2.1 WATER HEATERS

A. Residential Electric:
1. Type: Automatic, electric, vertical storage. Refer to Plumbing Schedules.
2. Tank: Glass lined welded steel, thermally insulated with one inch (25 mm) thick glass fiber; encased in corrosion-resistant steel jacket; baked-on enamel finish.
3. Controls: Automatic water thermostat with externally adjustable temperature range from 120 to 170 degrees F (49 to 77 degrees C), flanged or screw-in nichrome elements, enclosed controls and electrical junction box and operating light.
4. Accessories:
a. Water Connections: Brass.
b. Dip Tube: Brass.
c. Drain valve.
d. Anode: Magnesium.
e. Temperature and Pressure Relief Valve: ASME labeled.
f. Drain pan / equipment platform.

2.2 DIAPHRAGM-TYPE COMPRESSION TANKS

A. Construction: Welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; supplied with National Board Form U-1, rated for working pressure of 125 psig (860 kPa), with flexible EPDM diaphragm sealed into tank, and steel legs or saddles.

B. Accessories: Pressure gauge and air-charging fitting, tank drain; precharge to 12 psig (80 kPa).

2.3 IN-LINE CIRCULATOR PUMPS

A. Casing: Bronze, rated for 125 psig (860 kPa) working pressure, with stainless steel rotor assembly.

B. Impeller: Bronze.

C. Shaft: Alloy steel with integral thrust collar and two oil lubricated bronze sleeve bearings.

D. Seal: Carbon rotating against a stationary ceramic seat.

E. Drive: Flexible coupling.

2.4 ELECTRICAL WORK

A. Provide electrical motor driven equipment specified complete with motors, motor starters, controls, and wiring.

B. Electrical characteristics to be as specified or indicated.

C. Supply manual or automatic control and protective or signal devices required for the operation specified, and any control wiring required for controls and devices not shown.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.
   1. Equipment platform mounting installation to existing masonry/plaster walls.

B. Coordinate with plumbing piping and related electrical work to achieve operating system.

C. Pumps:
   1. Provide line sized isolating valve and strainer on suction and line sized soft seated check valve and balancing valve on discharge.
   2. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

D. Tests and Inspections:
   1. Leak Test: After installation, charge system and test for leaks. Repair leasks and retest unitl nop leaks exist.
   2. Operational Test: After electrical circuity has been energized, start units to confirm proper operation.
   3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

END OF SECTION 223000

SECTION 224000 - PLUMBING FIXTURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SECTION INCLUDES

A. Flush valve water closets.

B. Wall hung urinals.

C. Lavatories.

D. Sinks.

E. Under-lavatory pipe supply covers.

F. Indoor drinking fountains.

G. Service sinks.

1.3 RELATED REQUIREMENTS

A. Section 221005 - Plumbing Piping.

B. Section 221006 - Plumbing Piping Specialties.

1.4 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.

B. ASME A112.6.1M - Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use 1997 (Reaffirmed 2017).

C. ASME A112.18.1 - Plumbing Supply Fittings 2018, with Errata.

D. ASME A112.18.9 - Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures 2011 (Reaffirmed 2017).

E. ASME A112.19.2 - Ceramic Plumbing Fixtures 2018, with Errata.

F. ASME A112.19.3 - Stainless Steel Plumbing Fixtures 2017, with Errata.

G. ASME A112.19.5 - Flush Valves and Spuds for Water Closets, Urinals, and Tanks 2017.

H. ASSE 1070 - Performance Requirements for Water Temperature Limiting Devices 2020.

I. ASTM C1822 - Standard Specification for Insulating Covers on Accessible Lavatory Piping 2021.

J. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

K. NSF 61 - Drinking Water System Components - Health Effects 2020.

L. NSF 372 - Drinking Water System Components - Lead Content 2020.

1.5 SUBMITTALS

A. See Section 13300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

C. Maintenance Data: Include fixture trim exploded view and replacement parts lists.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Accept fixtures on site in factory packaging. Inspect for damage.

B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.2 REGULATORY REQUIREMENTS

A. Comply with applicable codes for installation of plumbing systems.

B. Perform work in accordance with local health department regulations.

C. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

2.3 FLUSH VALVE WATER CLOSETS

A. Water Closets: Vitreous china, ASME A112.19.2, floor mounted, siphon jet flush action, china bolt caps. Refer to Plumbing Schedules.
1. Vitreous china, ASME A112.19.2, Floor mounted and Wall Hung, siphon jet flush action, china bolt caps.
2. Bowl: ASME A112.19.2; 16.5 inches (420 mm) high with elongated rim.
3. Flush Valve: Exposed (top spud).
4. Flush Operation: Manual, oscillating handle.
5. Handle Height: 44 inches (1117 mm) or less.
6. Inlet Size: 1-1/2 inches (38 mm).
7. Trapway Outlet: 4 inch (100 mm, DN).

B. Flush Valves:
1. Valve Supply Size: 1 inch (25 mm, DN).
2. Valve Outlet Size: 1-1/2 inches (40 mm, DN).
3. Manual Operated:
   a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type complete with vacuum breaker stops, and accessories.
   b. Supplied Volume Capacity: 1.28 gal per flush.

C. Toilet Seats:
1. Plastic: Solid, white finish, enlongated shape, open front, slow-closing hinged seat cover, extended back complete with self-sustaining hinges, and brass bolts without cover.

D. Water Closet Carriers:
1. ASME A112.6.1M; adjustable cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.

2.4 WALL HUNG URINALS

A. Urinals: Vitreous china, ASME A112.19.2, wall hung with side shields and concealed carrier. Refer to Plumbing Schedules.
1. Flush Volume: 0.5 gallons (1.9 liters), maximum.
2. Flush Style: Washout.
3. Flush Valve: Exposed (top spud).
4. Flush Operation: Manual, oscillating handle.
5. Trapway Outlet: Integral.
6. Removable stainless steel strainer.
7. Supply Size: 3/4 inch (19 mm).
8. Outlet Size and Location: 2 inches (50 mm), rear side.

B. Flush Valves:
1. Manual Operated:
a. Type: ASME A112.18.1 or ASME A112.19.5; diaphragm type, complete with vacuum breaker stops, and accessories.
b. Supplied Volume Capacity: 0.5 gal per flush.

C. Wall-Hung Urinal Carriers:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.5 LAVATORIES

A. Wall-Hung Basin:
1. Vitreous China, Grade A: ASME A112.19.2; white rectangular commercial-grade sink with predrilled holes, rear-center drain, front overflow, and hanger. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.
2. Carrier:
a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.

B. Drop-In Basin:
1. Vitreous China: ASME A112.19.2; self-rimming, white, square shape, front overflow, soap depression, seal of putty, calking, or concealed vinyl gasket, and white finish. Size as indicated on drawings with 4 inch (100 mm) centerset spacing.

C. Supply Faucet:
1. Supply Faucet: ASME A112.18.1; chrome plated combination supply fitting with open grid strainer, water economy aerator with maximum flow of 0.5 gpm (1.9 Lpm), indexed handles.
2. Provide soap dispenser, Kohler model K-1995, Chrome plated.

D. Thermostatic Mixing Valve:
1. ASSE 1070 listed with combination stop, strainer, and check valves, and flexible stainless steel connectors.

2. Braided hot and cold water supply lines.

E. Accessories:
1. Chrome plated 17 gauge, 0.0538 inch (1.37 mm) brass P-trap with clean-out plug and arm with escutcheon.

F. Lavatory Carrier:
1. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded studs for fixture hanger, bearing plate and studs.

2.6 SINKS: Refer to Plumbing Schedules.

A. Single Compartment Bowl
1. ASME A112.19.3 22"x19-1/2"x6-1/2" outside dimensions 18 gauge thick, Type 304 stainless steel, self rimming and undercoated, with ledge back drilled for trim.

B. Kitchen Faucets:
1. Two Handle Faucet:
a. Spray Type: Full stream spray at 1.5 gpm (5.6 Lpm), maximum.
b. ASME A112.18.1, ADA Standards, and NSF 61 compliant assembly.
c. Materials: Stainless steel disc valve on brass body with polished chrome finish.
d. Hose and spray.

2.7 UNDER-LAVATORY PIPE SUPPLY COVERS

A. General:
1. Insulate exposed drainage piping including hot, cold and tempered water supplies under lavatories or sinks per ADA Standards.
2. Construction: 1/8 inch (3.2 mm) PVC with antimicrobial, antifungal and UV resistant properties.
a. Comply with ASME A112.18.9 for covers on accessible lavatory piping.
b. Comply with ICC A117.1.
3. Color: High gloss white.
4. Fasteners: Reusable, snap-locking fasteners with no sharp or abrasive external surfaces. No cable ties allowed.

2.8 INDOOR DRINKING FOUNTAINS

A. Fountain: Refer to plumbing schedules.
1. Stainless steel, bi-level fountain, non-refrigerated, non-filtered.
2. Support: Provide manufacturer's mounting plate and drinking fountain carrier.
3. Drinking Fountain Mounting Height: High/low - standard/accessible in accordance with ICC A117.1.

2.9 SERVICE SINKS

A. Self-Standing, Single-Bowl, Laundry Sink: 2-hole, white finished, plastic-molded bowl, capacity with integral-molded drain and stopper. Size as indicated on drawings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.

B. Verify that electric power is available and of the correct characteristics.

C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.2 PREPARATION

A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.3 INSTALLATION

A. Install each fixture with trap, easily removable for servicing and cleaning.

B. Provide chrome-plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.

C. Install components level and plumb.

D. Install and secure fixtures in place with wall supports and bolts.

E. Seal joints between fixtures using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color, Comply with sealant requirements specified in specification Section 072900 "Joint Sealants.".

3.4 INTERFACE WITH WORK OF OTHER SECTIONS

A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.5 ADJUSTING

A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.6 CLEANING

A. Clean plumbing fixtures and equipment.

3.7 PROTECTION

A. Protect installed products from damage due to subsequent construction operations.

B. Do not permit use of fixtures by construction personnel.

C. Repair or replace damaged products before Date of Substantial Completion.

3.8 SCHEDULES

A. Fixture Heights: Install fixtures to heights above finished floor as indicated.
   1. Water Closet:
      a. Standard: 15 inches (380 mm) to top of bowl rim.
      b. Accessible: 18 inches (455 mm) to top of seat.
   2. Water Closet Flush Valves:

a. Standard: 11 inches (280 mm) min. above bowl rim.
b. Recessed: 10 inches (255 mm) min. above bowl rim.

3. Urinal:
   a. Standard: 22 inches (560 mm) to top of bowl rim.
   b. Accessible: 17 inches (430 mm) to top of bowl rim.
4. Lavatory:
   a. Standard: 31 inches (785 mm) to top of basin rim.
   b. Accessible: 34 inches (865 mm) to top of basin rim.

END OF SECTION 224000

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DIVISION 23

Heating, Ventilating and Air Conditioning

SECTION 230130.51 - HVAC AIR-DISTRIBUTION SYSTEM CLEANING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Cleaning of new and existing HVAC duct system, equipment, and related components.

1.3 RELATED REQUIREMENTS

A. Section 014000 - Quality Requirements: Additional requirements for testing and inspection agencies.

B. Section 233100 - HVAC Ducts and Casings: Cleaning requirements for new ductwork.

C. Section 230593.00 - Testing, Adjusting and Balalncing for HVAC: System flow documentation before cleaning and balancing and following cleaning and restoration.

1.4 DEFINITIONS

A. HVAC System: For purposes of this section, the surfaces to be cleaned include all interior surfaces of the heating, air-conditioning and ventilation system from the points where the air enters the system to the points where the air is discharged from the system, including the inside of air distribution equipment, coils, and condensate drain pans; see NADCA ACR for more details.
   1. Above-ceiling plenum for supply air is required to be cleaned.
   2. Above-ceiling plenum for return air is required to be cleaned.

1.5 REFERENCE STANDARDS

A. NADCA ACR - Assessment, Cleaning and Restoration of HVAC Systems 2013.

B. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors current edition, including all revisions.

C. UL 181A - Closure Systems for Use with Rigid Air Ducts Current Edition, Including All Revisions.

1.6 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.

C. Qualifications Statement: Submit qualifications of proposed cleaning contractor for approval.

D. Project Cleanliness Evaluation and Cleaning Plan, as specified.

E. Material Safety Data Sheets (MSDS): For all chemical products proposed to be used in the cleaning process; submit directly to Owner.

F. Project Closeout Report: Include field quality control reports, evidence of satisfactory cleaning, and documentation of items needing further repair.

1.7 QUALITY ASSURANCE

A. Cleaning Contractor Qualifications: Company specializing in the cleaning and restoration of HVAC systems as specified in this section.
   1. Certified by one of the following:
      a. NADCA, National Air Duct Cleaners Association: www.nadca.com
   2. Having minimum of three years documented experience.
   3. Employing for this project a supervisor certified as an Air Systems Cleaning Specialist by NADCA.

PART 2 PRODUCTS

2.1 HVAC CLEAQNING AGENTS

A. Formulated for each specific soile coil condition that needs remedy.

B. Will not corrode or tarnish aluminum, copper or other materials.

2.2 ANTIMICROBIAL SURFACE TREATMENT

A. Descritpion: Specific product slected shall be as recommneded by the IEP based on specific antimicrobial needs of the specific project.
   1. Formulated to kill and inhibit growth of microorganisms.
   2. EPA-registered for use in HVAC systems and for the specific application in which it will be used.
   3. Have no resifual action after drying, with zero VOC off-gassing.
   4. OSHA compliant.
   5. Treatment shall dry clear to allow continued visual observation of the treated surface.

2.3 TOOLS AND EQUIPMENT

A. Vacuum Devices and Other Tools: Exceptionally clean, in good working order, and sealed when brought into the facility.

B. Vacuum Devices That Exhaust Air Inside Building, Including Hand-Held and Wet Vacuums: Equipped with HEPA filtration with 99.97 percent collection efficiency for minimum 0.3-micron size particles and DOP test number.

C. Vacuum Devices That Exhaust Air Outside Building, Including Truck- and Trailer-Mounted Types: Equipped with particulate collection including adequate filtration to contain debris removed from the HVAC system; exhausted in manner that prevents contaminant re-entry to building; compliant with applicable regulations as to outdoor environmental contamination.

2.4 REPLACEMENT PRODUCTS

A. Fibrous Glass Insulation: Provide material complying with UL 181 equivalent to existing material in quality and thickness. Replace insulation as required or replace with new if damaged.

PART 3 EXECUTION

3.1 PROJECT CONDITIONS

A. Comply with applicable federal, state, and local requirements.

B. Perform cleaning, inspection, and remediation in accordance with the recommendations of NADCA "Assessment, Cleaning and Restoration of HVAC Systems" (ACR) and as specified herein.

C. Where NADCA ACR uses the terms "recommended", "highly recommended", or "ideally" in regard to a certain procedure or activity, do that unless it is clearly inapplicable to the project.

D. Obtain Owner's approval of proposed temporary locations for large equipment.

E. Designate a decontamination area and obtain Owner's approval.

F. If unforeseen mold or other biological contamination is encountered, notify Architect immediately, identifying areas affected and extent and type of contamination.

3.2 EXAMINATION

A. Prior to the commencement of any cleaning work, prepare and submit to Architect a project evaluation and plan for this project, including considerations recommended in NADCA ACR.

B. Inspect the system as required to determine appropriate methods, tools, equipment, and protection.

C. Start of cleaning work constitutes acceptance of existing conditions.

D. When concealed spaces are later made accessible, examine and document interior conditions prior to beginning cleaning.

E. Document all instances of mold growth, rodent droppings, other biological hazards, and damaged system components.

3.3 PREPARATION

A. When cleaning work might adversely affect life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with authorities having jurisdiction.

B. Ensure that electrical components that might be adversely affected by cleaning are de-energized, locked out, and protected prior to beginning work.

C. Air-Volume Control Devices: Mark the original position of dampers and other air-directional mechanical devices inside the HVAC system prior to starting cleaning.

D. Access to Concealed Spaces: Use existing service openings and make additional service openings as required to accomplish cleaning and inspection.
   1. Do not cut openings in non-HVAC components without obtaining the prior approval of Owner.
   2. Make new openings in HVAC components in accordance with NADCA Standard 05; do not compromise the structural integrity of the system.
   3. Do not cut service openings into flexible duct; disconnect at ends for cleaning and inspection.

E. Ceiling Tile: Lay-in ceiling tile may be removed to gain access to HVAC systems during the cleaning process; protect tile from damage and reinstall upon completion; replace damaged tile.

3.4 CLEANING

A. Use any cleaning method recommended by NADCA ACR unless otherwise specified; do not use methods prohibited by NADCA ACR, or that will damage HVAC components or other work, or that will significantly alter the integrity of the system.

B. Obtain Owner's approval before using wet cleaning methods; ensure that drainage is adequate before beginning.

C. Ducts: Mechanically clean all portions of ducts.

D. Hoses, Cables, and Extension Rods: Clean using suitable sanitary damp wipes at the time they are being removed or withdrawn from their normal position.

E. Registers, Diffusers, and Grilles: When removing, take care to prevent containment exposure due to accumulated debris.

F. Coils: Follow NADCA ACR completely including measuring static pressure drop before and after cleaning; do not remove refrigeration coils from system to clean; report coils that are permanently impacted.

G. Collect debris removed during cleaning; ensure that debris is not dispersed outside the HVAC system during the cleaning process.

H. Store contaminated tools and equipment in polyethylene bags until cleaned in the designated decontamination area.

3.5 REPAIR

A. Repair openings cut in the ventilation system so that they do not significantly alter the airflow or adversely impact the facility's indoor air quality.

B. At insulated ducts and components, accomplish repairs in such a manner as to achieve the equivalent thermal value.

C. Reseal new openings in accordance with NADCA Standard 05.

D. Reseal rigid fiber glass duct systems using closure techniques that comply with UL 181 or UL 181A.

E. New closure materials, including insulation, shall match opened material and shall have removeable closure panels fitted with gaskets and fasteners.

F. When new openings are intended to be capable of being re-opened in the future, clearly mark them and report their locations to Owner in project report documents.

3.6 FIELD QUALITY CONTROL

A. Ensure that the following field quality control activities are completed prior to application of any treatments or coatings and prior to returning HVAC system to normal operation.

B. Visually inspect all portions of the cleaned components; if not visibly clean as defined in NADCA ACR, re-clean and reinspect.

C. Coils: Cleaning must restore the coil pressure drop to within 10 percent of the coil's original installed pressure drop; if original pressure drop is not known, coil will be considered clean if free of foreign matter and chemical residue based on visual inspection.

D. Notify Architect when cleaned components are ready for inspection.

E. When directed, re-clean components until they pass.

F. Submit evidence that all portions of the system required to be cleaned have been cleaned satisfactorily.

G. Prepare a written cleanliness verification report. At a minimum, include the follwoing:
   1. Written documetation of successful cleaning.
   2. Site inspection reportd, initialed by supervisor, including notation on areas of inspection, as verified through visual inspection.
   3. Surface comparison test results if required.
   4. Gravametric analysis (nonporous surfaces only).
   5. System areas found to be damaged.

3.7 ANTI-MICROBIAL TREATMENT

A. When directed, apply anti-microbial treatment to internal surfaces.

B. Apply anti-microbial agent after removal of surface deposits and debris.

C. Apply anti-microbial treatments and coatings in strict accordance with the manufacturer's written recommendations and EPA registration listing.

D. Spray coatings directly onto interior ductwork surfaces; do not "fog" into air stream.

3.8 ADJUSTING

A. After satisfactory completion of field quality control activities, restore adjustable devices to original settings, including, but not limited to, dampers, air directional devices, valves, fuses, and circuit breakers.

3.9 WASTE MANAGEMENT

A. Double-bag waste and debris in 6 mil, 0.006 inch (0.1524 mm) thick polyethylene plastic bags.

B. Dispose of debris off-site in accordance with applicable federal, state and local requirements.

END OF SECTION 23013

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 RELATED REQUIREMENTS

A. Section 055000 - Metal Fabrications: Materials and requirements for fabricated metal supports.

1.3 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.

C. ASTM A181/A181M - Standard Specification for Carbon Steel Forgings, for General - Purpose Piping 2014 (Reapproved 2020).

D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

E. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings 1999, with Editorial Revision (2018).

F. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.

G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

H. MFMA-4 - Metal Framing Standards Publication 2004.

I. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation 2018 (Amendent 2019).

J. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems, nonpenetrating rooftop supports, post-installed concrete and masonry anchors, and thermal insulated pipe supports.

C. Shop Drawings: Include details for fabricated hangers and supports where materials or methods other than those indicated are proposed for substitution.

1.5 QUALITY ASSURANCE

A. Comply with applicable building code.

B. Installer Qualifications for Field-Welding: As specified in Section 055000.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PERFROMANCE REQUIREMENTS

A. Structural Performance: hangers and supports fro HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits under conditions indicated according to ASCE/SEI 7.
   1. Design supports for multiple pipes, including pipe stands, capable of supporting combined weight of systems, system contents, and test water.
   2. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

2.2 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Comply with MSS SP-58.
   2. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of plumbing work.
   3. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
   4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
   5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
   6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
      a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
      b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
   1. Comply with MFMA-4.

C. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
   1. Minimum Size, Unless Otherwise Indicated or Required:
      a. Equipment Supports: 1/2 inch (13 mm) diameter.
      b. Piping up to 1 inch (27 mm) nominal: 1/4 inch (6 mm) diameter.
      c. Piping larger than 1 inch (27 mm) nominal: 3/8 inch (10 mm) diameter.
      d. Trapeze Support for Multiple Pipes: 3/8 inch (10 mm) diameter.

D. Pipe Supports:
   1. Liquid Temperatures Up To 122 degrees F (50 degrees C):
      a. Overhead Support: MSS SP-58 Types 1, 3 through 12.
   2. Operating Temperatures from 122 to 446 degrees F (50 to 230 degrees C):
      a. Overhead Support: MSS SP-58 Type 1 or 3 through 12, with appropriate saddle of MSS SP-58 Type 40 for insulated pipe.

E. Beam Clamps: MSS SP-58 Types 19 through 23, 25 or 27 through 30 based on required load.
   1. Material: ASTM A36/A36M carbon steel or ASTM A181/A181M forged steel.
   2. Provide clamps with hardened steel cup-point set screws and lock-nuts for anchoring in place.

F. Strut Clamps: Two-piece pipe clamp.

G. Pipe Hangers: For a given pipe run, use hangers of the same type and material.
   1. Material: Malleable iron, ASTM A47/A47M; or carbon steel, ASTM A36/A36M.
   2. Provide coated or plated hangers to isolate steel hangers from dissimilar metal tube or pipe.

H. Pipe Shields for Insulated Piping:
   1. General Construction and Requirements:
      a. Surface Burning Characteristics: Comply with ASTM E84 or UL 723.
      b. Shields Material: UV-resistant polypropylene with glass fill.
      c. Maximum Insulated Pipe Outer Diameter: 12-5/8 inch (321 mm).
      d. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).
      e. Maximum Service Temperature: 178 degrees F (81 degrees C).
      f. Pipe shields to be provided at hanger, support, and guide locations on pipe requiring insulation or additional support.

I. Anchors and Fasteners:
   1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
   2. Concrete: Use expansion anchors or screw anchors.
   3. Steel: Use beam clamps, machine bolts, or welded threaded studs.
   4. Sheet Metal: Use sheet metal screws.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 APPLICATION

A. Comply with requirements of section 078413 "Penetration Firestopping" for fire stopping materials and installation, for penetrations through fire-rated walls, ceilings and assemblies.

B. Stength of Support Assemblies: Where not indicatedm select sizes of components, so strength will be adequate to carry present anf future static loads within specified loading limits. Minimum static design load for strength determination shall be weight of supported components plus 200 lbs.

3.3 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Pipe Slopes: Install hangers and supports fo provide indicated pipe slopes and to not exceed maximum deflections allowed by ASME B31.9 for building services piping.

C. Provide independent support from building structure. Do not provide support from piping, ductwork, conduit, or other systems.

D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

F. Do not penetrate or otherwise notch or cut structural members without approval of Architect.

G. Provide thermal insulated pipe supports complete with hangers and accessories. Install thermal insulated pipe supports during the installation of the piping system.

H. Equipment Support and Attachment:
1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
5. Install lateral bracing wwith pipie hangers and supports to prevent swaying.

I. Secure fasteners according to manufacturer's recommended torque settings.

J. Remove temporary supports.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Inspect support and attachment components for damage and defects.

C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION 230529

SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Nameplates.

B. Adhesive-backed duct markers.

C. Pipe markers.

D. Ceiling tacks.

1.3 REFERENCE STANDARDS

A. ASTM D709 - Standard Specification for Laminated Thermosetting Materials 2017.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.

C. Product Data: Provide manufacturers catalog literature for each product required.

D. Manufacturer's Installation Instructions: Indicate special procedures, and installation.

PART 2 PRODUCTS

2.1 IDENTIFICATION APPLICATIONS

A. Air Handling Units: Nameplates.

B. Ductwork: Adhesive-backed duct markers.

C. Major Control Components: Nameplates.

D. Piping: Pipe markers.

E. Small-sized Equipment: Tags.

F. Valves: Tags and ceiling tacks where located above lay-in ceiling.

2.2 NAMEPLATES

A. Letter Color: White.

B. Letter Height: 1/4 inch (6 mm).

C. Background Color: Black.

D. Plastic: Comply with ASTM D709.

2.3 ADHESIVE-BACKED DUCT MARKERS

A. Material: High gloss acrylic adhesive-backed vinyl film 0.0032 inch (0.76 mm); printed with UV and chemical resistant inks.

B. Style: Individual Label.

C. Color: Yellow/Black.

2.4 PIPE MARKERS

A. Color: Comply with ASME A13.1.

B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

2.5 CEILING MARKERS: Tacks or Tape

A. Provide ceiling tacks in acoustical tile ceilings ir color coded tape applied to ceiing grid to locate equipment, valves, or dampers that require regular maintenace or are part of a life safety system.

B. Tack Description: Steel with 3/4 inch (20 mm) diameter color coded head.

C. Color code as follows:
1. HVAC Equipment: Yellow.
2. Fire Dampers and Smoke Dampers: Red.
3. Heating/Cooling Valves: Blue.

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install plastic pipe markers in accordance with manufacturer's instructions.

C. Install ductwork with Adhesive-backed duct marker. Identify with air handling unit identification number and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.

D. Install color coded ceiling tacks in acoustical tile ceilings or color coded tap on ceilng grid to identify location of equipment, valves, and dampers that require regular maintenance or are part of a life safety system (fire dampers, smoke dampers, sprinkler vlaves or main isolation valves). Concealed fire protection valves shall be marked by red label triangles (3"equilateral) and circle dots (1" diamter).

Triangles shall be placed on the wall nearest the vlave withthe apex pointing toward the ceiling tile. Dots shall be placed on border of ceiling tile.

END OF SECTION 230553

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Testing, adjustment, and balancing of air systems.

1.3 RELATED REQUIREMENTS

A. Section 230130.51 - Air Distribution System Cleaning

B. Section 012100 - Allowances: Inspection and testing allowances.

1.4 REFERENCE STANDARDS

A. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition 2016.

B. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems 2008, with Errata (2019).

C. NEBB (TAB) - Procedural Standards for Testing Adjusting and Balancing of Environmental Systems 2015, with Errata (2017).

D. SMACNA (TAB) - HVAC Systems Testing, Adjusting and Balancing 2002.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Installer Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.

C. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
   1. Include at least the following in the plan:
      a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
      b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
      c. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
      d. Final test report forms to be used.
      e. Detailed step-by-step procedures for TAB work for each system and issue, including:
         1) Terminal flow calibration (for each terminal type).
         2) Diffuser proportioning.
         3) Branch/submain proportioning.
         4) Total flow calculations.

5) Rechecking.
6) Diversity issues.

f. Procedures for formal deficiency reports, including scope, frequency and distribution.

D. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
1. Revise TAB plan to reflect actual procedures and submit as part of final report.
2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
5. Units of Measure: Report data in I-P (inch-pound) units only.
6. Include the following on the title page of each report:
a. Name of Testing, Adjusting, and Balancing Agency.
b. Address of Testing, Adjusting, and Balancing Agency.
c. Telephone number of Testing, Adjusting, and Balancing Agency.
d. Project name.
e. Project location.
f. Project Architect.
g. Project Engineer.
h. Project Contractor.
i. Project altitude.
j. Report date.

E. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. Perform total system balance in accordance with one of the following:
1. AABC (NSTSB), AABC National Standards for Total System Balance.
2. SMACNA (TAB).

B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.

C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.

D. TAB Agency Qualifications:
1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.
2. Having minimum of three years documented experience.
3. Certified by one of the following:
a. AABC, Associated Air Balance Council: www.aabc.com/#sle; upon completion submit AABC National Performance Guaranty.
b. NEBB, National Environmental Balancing Bureau: www.nebb.org/#sle.
c. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute: www.tabbcertified.org/#sle.

E. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

3.2 EXAMINATION

A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
2. Temperature control systems are installed complete and operable.
3. Proper thermal overload protection is in place for electrical equipment.
4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
5. Duct systems are clean of debris.
6. Fans are rotating correctly.
7. Fire and volume dampers are in place and open.
8. Air coil fins are cleaned and combed.
9. Access doors are closed and duct end caps are in place.
10. Air outlets are installed and connected.
11. Duct system leakage is minimized.

B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.

C. Beginning of work means acceptance of existing conditions.

3.3 ADJUSTMENT TOLERANCES

A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.

B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.

3.4 RECORDING AND ADJUSTING

A. Ensure recorded data represents actual measured or observed conditions.

B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

C. Mark on drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

3.5 AIR SYSTEM PROCEDURE

A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.

B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.

F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.

G. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.

H. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.

I. Perform testing and balancing of existing systems to the extent that existing systems are affected by the renovation work.
   1. Compare the indicated airflow of the renovated work to the measured fan airflows, and determine the new fan speed and the face velocity of filters and coils.
   2. Verify that the indicated airflows of the renovated work result in filter and coil face velocities and fan speeds that are within the acceptable limits defined by equipment manufacturer.
   3. If calculations increase or decrease the airflow rates and water flow rates by more than [5] percent, make equipment adjustments to achieve the calculated rates. If increase or decrease is [5] percent or less, equipment adjustments are not required.
   4. Balance each air outlet.

3.6 SCOPE

A. Test, adjust, and balance the following:
   1. Packaged Roof Top Heating/Cooling Units, Both New and Existing
   2. Computer Room Air Conditioning Units.
   3. Fans.
   4. Air Inlets and Outlets.

3.7 MINIMUM DATA TO BE REPORTED

A. Electric Motors:
   1. Manufacturer.
   2. Model/Frame.
   3. HP/BHP.
   4. Phase, voltage, amperage; nameplate, actual, no load.
   5. RPM.
   6. Service factor.
   7. Starter size, rating, heater elements.
   8. Sheave Make/Size/Bore.

B. V-Belt Drives:
   1. Identification/location.
   2. Required driven RPM.
   3. Driven sheave, diameter and RPM.
   4. Belt, size and quantity.
   5. Motor sheave diameter and RPM.
   6. Center to center distance, maximum, minimum, and actual.

C. Return Air/Outside Air:

1. Identification/location.
2. Design return air flow.
3. Actual return air flow.
4. Actual outside air flow.
5. Return air temperature.
6. Outside air temperature.

D. Exhaust Fans:
1. Location.
2. Manufacturer.
3. Model number.
4. Serial number.
5. Air flow, specified and actual.
6. Total static pressure (total external), specified and actual.
7. Inlet pressure.
8. Discharge pressure.
9. Sheave Make/Size/Bore.
10. Number of Belts/Make/Size.
11. Fan RPM.

E. Duct Traverses:
1. System zone/branch.
2. Duct size.
3. Area.
4. Design velocity.
5. Design air flow.
6. Test velocity.
7. Test air flow.
8. Duct static pressure.
9. Air temperature.
10. Air correction factor.

END OF SECTION 230593

SECTION 230713 - DUCT INSULATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Duct insulation.

1.3 RELATED REQUIREMENTS

A. Section 230553 - Identification for HVAC Piping and Equipment.

B. Section 233100 - HVAC Ducts and Casings: Glass fiber ducts.

1.4 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.

B. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).

C. ASTM C1290 - Standard Specification for Flexible Fibrous Glass Blanket Insulation Used to Externally Insulate HVAC Ducts 2016 (Reapproved 2021).

D. ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings 2019.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

F. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.

G. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.

H. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures necessary to ensure acceptable workmanship and that installation standards will be achieved.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section with not less than three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.

B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 GLASS FIBER, FLEXIBLE

A. Manufacturer:
1. CertainTeed Corporation: www.certainteed.com/#sle.
2. Johns Manville: www.jm.com/#sle.
3. Knauf Insulation; Atmosphere Duct Wrap: www.knaufinsulation.com/#sle.
4. Owens Corning Corporation: www.ocbuildingspec.com/#sle.

B. Insulation: ASTM C553; flexible, noncombustible blanket.
1. K (Ksi) value: 0.36 at 75 degrees F (0.052 at 24 degrees C), when tested in accordance with ASTM C518.
2. Maximum Service Temperature: 1200 degrees F (649 degrees C).
3. Maximum Water Vapor Absorption: 5.0 percent by weight.

C. Vapor Barrier Jacket:
1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch (0.029 ng/Pa s m), when tested in accordance with ASTM E96/E96M.
3. Secure with pressure sensitive tape.

PART 3 EXECUTION

3.1 EXAMINATION

A. Test ductwork for design pressure prior to applying insulation materials.

B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Insulated Ducts Conveying Air Below Ambient Temperature:
1. Provide insulation with vapor barrier jackets.

2. Finish with tape and vapor barrier jacket.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system, including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

3.3 SCHEDULES

A. Exhaust Ducts Within 10 ft (3 m) of Exterior Openings: 2" thick mineral-fiber blanket, 0.75-lb/cu. ft. nominal density.

B. Supply Ducts: 2" thick mineral-fiber blanket, 0.75-lb/cu. ft. nominal density. Minimum of R-6 installed R-Value.

END OF SECTION 230713

SECTION 230719 - HVAC PIPING INSULATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Piping insulation.

B. Flexible removable and reusable blanket insulation.

C. Jackets and accessories.

1.3 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 078400 - Firestopping.

C. Section 232300 - Refrigerant Piping:

1.4 REFERENCE STANDARDS

A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019.

B. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form 2020a.

C. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation 2019.

D. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2021a.

E. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2019.

F. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel 2008 (Reapproved 2018).

G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

H. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.

I. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

C. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.8 FIELD CONDITIONS

A. Maintain ambient conditions required by manufacturers of each product.

B. Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 GLASS FIBER, RIGID

A. Manufacturers:
1. CertainTeed Corporation: www.certainteed.com/#sle.
2. Johns Manville Corporation: www.jm.com/#sle.
3. Knauf Insulation; Earthwool 1000 Degree Pipe Insulation: www.knaufinsulation.com/#sle.

B. Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
1. K (Ksi) Value: ASTM C177, 0.24 at 75 degrees F (0.035 at 24 degrees C).
2. Maximum Service Temperature: 850 degrees F (454 degrees C).
3. Maximum Moisture Absorption: 0.2 percent by volume.

C. Vapor Barrier Jacket: White kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches (0.029 ng/Pa s m).

D. Vapor Barrier Lap Adhesive: Compatible with insulation.

2.3 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A. Manufacturers:
1. Aeroflex USA, Inc; Aerocel Stay-Seal with Protape (SSPT): www.aeroflexusa.com/#sle.
2. Armacell LLC; AP Armaflex: www.armacell.us/#sle.
3. K-Flex USA LLC; K-Flex Titan: www.kflexusa.com/#sle.

B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.
1. Minimum Service Temperature: Minus 40 degrees F (Minus 40 degrees C).

2. Maximum Service Temperature: 180 degrees F (82 degrees C).
3. Connection: Waterproof vapor barrier adhesive.

2.4 JACKETS

A. PVC Plastic.
1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
a. Minimum Service Temperature: 0 degrees F (minus 18 degrees C).
b. Maximum Service Temperature: 150 degrees F (66 degrees C).
c. Moisture Vapor Permeability: 0.002 perm inch (0.0029 ng/Pa s m), maximum, when tested in accordance with ASTM E96/E96M.
d. Thickness: 10 mil (0.25 mm).
e. Connections: Brush on welding adhesive.

PART 3 EXECUTION

3.1 EXAMINATION

A. Test piping for design pressure, liquid tightness, and continuity prior to applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Exposed Piping: Locate insulation and cover seams in least visible locations.

C. Insulated Pipes Conveying Fluids Below Ambient Temperature:
1. Insulate entire system, including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.

D. Glass Fiber Insulated Pipes Conveying Fluids Below Ambient Temperature:
1. Provide vapor barrier jackets, factory-applied or field-applied; secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.

E. For hot piping conveying fluids 140 degrees F (60 degrees C) or less, do not insulate flanges and unions at equipment, but bevel and seal ends of insulation.

F. For hot piping conveying fluids over 140 degrees F (60 degrees C), insulate flanges and unions at equipment.

G. Glass Fiber Insulated Pipes Conveying Fluids Above Ambient Temperature:
1. Provide standard jackets, with or without vapor barrier, factory-applied, or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples.
2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.

H. Inserts and Shields:
1. Application: Piping 1-1/2 inches (40 mm) diameter or larger.
2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.

I. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 078400.

J. Exterior Applications: Provide vapor barrier jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor barrier cement. Cover with PVC jacket with seams located on bottom side of horizontal piping. Provide two coats of UV resistant finish for flexible elastomeric cellular insulation without jacketing.

3.3 SCHEDULE

A. Cooling Systems:
1. Refrigerant Suction: 1" thick, flexible elastomeric or pre-formed mineral fiber. For exterior locations, 2" thick flexible elastomeric.
2. Refrigerant Hot Gas: 1" thick, flexible elastomeric or pre-formed mineral fiber. For exterior locations, 2" thick flexible elastomeric.

END OF SECTION 230719

SECTION 232300 - REFRIGERANT PIPING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Piping.

B. Refrigerant.

C. Flexible connections.

1.3 RELATED REQUIREMENTS

A. Section 0718413 - Penetration Firestopping.

B. Section 230719 - HVAC Piping Insulation.

C. Section 236313 - Air Cooled Refrigerant Condensers.

D. Section 238124 - Computer Room Air Conditioners - Floor Mounted.

1.4 REFERENCE STANDARDS

A. ASHRAE Std 15 - Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants 2019.

B. ASHRAE Std 34 - Designation and Safety Classification of Refrigerants 2019.

C. ASME BPVC-IX - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators 2021.

D. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings 2018.

E. ASME B31.5 - Refrigeration Piping and Heat Transfer Components 2020.

F. ASME B31.9 - Building Services Piping 2020.

G. ASTM B280 - Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service 2020.

H. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding 2011 (Amended 2012).

I. UL 207 - Standard for Refrigerant-Containing Components and Accessories, Nonelectrical Current Edition, Including All Revisions.

1.5 SYSTEM DESCRIPTION

A. Provide refrigeration pipng betwen components as shown onthe drawings. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.

B. Provide pipe hangers and supports in accordance with ASME B31.5 unless indicated otherwise.

C. Refrigerant Charging (Packed Angle) Valve: Use in liquid line between receiver shut-off valve and expansion valve.

D. Filter-Driers:
1. Use a filter-drier immediately ahead of liquid-line controls, such as thermostatic expansion valves, solenoid valves, and moisture indicators.

E. Flexible Connectors: Utilize at or near compressors where piping configuration does not absorb vibration.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures

B. Product Data: Provide general assembly of specialties, including manufacturers catalogue information. Provide manufacturers catalog data including load capacity.

C. Shop Drawings: Indicate schematic layout of system, including equipment, critical dimensions, and sizes.

D. Test Reports: Indicate results of leak test, acid test.

E. Submit welders certification of compliance with ASME BPVC-IX.

F. Maintenance Data: Include instructions for changing cartridges, assembly views, spare parts lists.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store piping and specialties in shipping containers with labeling in place.

B. Protect piping and specialties from entry of contaminating material by leaving end caps and plugs in place until installation.

C. Dehydrate and charge components such as piping and receivers, seal prior to shipment, until connected into system.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Comply with ASME B31.9 for installation of piping system.

B. Products Requiring Electrical Connection: Listed and classified by UL, as suitable for the purpose indicated.

2.2 PIPING

A. Copper Tube: ASTM B280, H58 hard drawn or O60 soft annealed.
1. Fittings: ASME B16.22 wrought copper.
2. Joints: Braze, AWS A5.8M/A5.8 BCuP silver/phosphorus/copper alloy.

2.3 REFRIGERANT

A. Refrigerant: As required for manufacturer for project-specific installation.

2.4 FLEXIBLE CONNECTORS

A. Corrugated bronze hose with single layer of stainless steel exterior braiding, minimum 9 inches (230 mm) long with copper tube ends; for maximum working pressure of 500 psi (3450 kPa).

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

A. Install refrigeration specialties in accordance with manufacturer's instructions.

B. Route piping in orderly manner, with plumbing parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Group piping whenever practical at common elevations and locations. Slope piping one percent in direction of oil return.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.5.
2. Support horizontal piping as indicated.
3. Install hangers to provide minimum 1/2 inch (13 mm) space between finished covering and adjacent work.
4. Place hangers within 12 inches (300 mm) of each horizontal elbow.

G. Arrange piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.

H. Provide clearance for installation of insulation and access to valves and fittings.

I. Flood piping system with nitrogen when brazing.

J. Insulate piping and equipment; refer to Section and Section 230716.

K. Follow ASHRAE Std 15 procedures for charging and purging of systems and for disposal of refrigerant.

L. Provide replaceable cartridge filter-driers, with isolation valves and valved bypass.

M. Locate expansion valve sensing bulb immediately downstream of evaporator on suction line.

N. Provide external equalizer piping on expansion valves with refrigerant distributor connected to evaporator.

O. Install flexible connectors at right angles to axial movement of compressor, parallel to crankshaft.

P. Fully charge completed system with refrigerant after testing.

3.3 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Test refrigeration system in accordance with ASME B31.5.

C. Pressure test system with dry nitrogen to 200 psi (1380 kPa). Perform final tests at 27 inches (92 kPa) vacuum and 200 psi (1380 kPa) using halide torch. Test to no leakage.

3.4 SCHEDULES

A. Hanger Spacing for Copper Tubing.
1. 1/2 inch (13 mm), 5/8 inch (16 mm), and 7/8 inch (22 mm) OD: Maximum span, 5 feet (1500 mm); minimum rod size, 1/4 inch (6.3 mm).
2. 1-1/8 inch (29 mm) OD: Maximum span, 6 feet (1800 mm); minimum rod size, 1/4 inch (6.3 mm).
3. 1-3/8 inch (35 mm) OD: Maximum span, 7 feet (2100 mm); minimum rod size, 3/8 inch (9.5 mm).
4. 1-5/8 inch (41 mm) OD: Maximum span, 8 feet (2400 mm); minimum rod size, 3/8 inch (9.5 mm).

END OF SECTION 232300

SECTION 233100 - HVAC DUCTS AND CASINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Metal ductwork.

B. Nonmetal ductwork.

C. Duct cleaning.

1.3 RELATED REQUIREMENTS

A. Section 230130.51 - HVAC Air-Distribution System Cleaning: Cleaning ducts after completion of installation.

B. Section 230593 - Testing, Adjusting, and Balancing for HVAC.

C. Section 230713 - Duct Insulation: External insulation and duct liner.

D. Section 233700 - Air Outlets and Inlets.

1.4 REFERENCE STANDARDS

A. ASHRAE (FUND) - ASHRAE Handbook - Fundamentals Most Recent Edition Cited by Referring Code or Reference Standard.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

D. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.

E. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

G. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.

H. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors current edition, including all revisions.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures

B. Product Data: Provide data for duct materials.

C. Shop Drawings: Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for 1/2" pressure class and higher systems.

D. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

1.6 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: A single set of plans, drawn to scale, showing the items described in this Section, and coordinated with all building trades.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum 3 years of documented experience.

1.8 FIELD CONDITIONS

A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.

B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

2.1 DUCT ASSEMBLIES

A. Regulatory Requirements: Construct ductwork to comply with SMACNA standards.

B. Ducts: Galvanized steel, unless otherwise indicated.

C. Low Pressure Supply (Heating Systems): 2 inch w.g. (500 Pa) pressure class, galvanized steel.

D. Low Pressure Supply (System with Cooling Coils): 2 inch w.g. (500 Pa) pressure class, galvanized steel.

E. Return and Relief: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

F. General Exhaust: 2 inch w.g. (500 Pa) pressure class, galvanized steel.

2.2 MATERIALS

A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.

B. Aluminum for Ducts: ASTM B209 (ASTM B209M); aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.

C. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
2. VOC Content: Not more than 250 g/L, excluding water.

3. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.

D. Gasket Tape: Provide butyl rubber gasket tape for a flexible seal between transfer duct connector (TDC), transverse duct flange (TDF), applied flange connections, and angle rings connections.

E. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

F. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.
5. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.
6. Other Types: As required.

2.3 DUCTWORK FABRICATION

A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.

B. No variation of duct configuration or size permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE (FUND) Handbook - Fundamentals.

C. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

D. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.

E. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.

F. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

2.4 MANUFACTURED DUCTWORK AND FITTINGS

A. Round Ducts: Round lockseam duct with galvanized steel outer wall.
1. Manufacture in accordance with SMACNA (DCS).

B. Flexible Ducts: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire.
1. Insulation: Fiberglass insulation with polyethylene vapor barrier film.
2. Pressure Rating: 10 inches WG (2.50 kPa) positive and 1.0 inches WG (250 Pa) negative.
3. Maximum Velocity: 4000 fpm (20.3 m/sec).
4. Temperature Range: Minus 20 degrees F to 210 degrees F (Minus 28 degrees C to 99 degrees C).

PART 3 EXECUTION

3.1 INSTALLATION

A. Install, support, and seal ducts in accordance with SMACNA (DCS).

B. Install in accordance with manufacturer's instructions.

C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.

D. Flexible Ducts: Connect to metal ducts with draw bands.

E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.

F. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

G. Use double nuts and lock washers on threaded rod supports.

H. Connect terminal units to supply ducts directly or with one foot (300 mm) maximum length of flexible duct. Do not use flexible duct to change direction.

I. Connect diffusers or light troffer boots to low pressure ducts directly or with 5 feet (1.5 m) maximum length of flexible duct held in place with strap or clamp.

3.2 CLEANING

A. Clean duct systems with high power vacuum machines. Protect equipment that could be harmed by excessive dirt with filters, or bypass during cleaning. Provide adequate access into ductwork for cleaning purposes.

B. For cleaning of new and existing ductwork, see Section 230130.51 "HVAC Air Distribution System Cleaning".

C. Use duct cleaning methodology as indicated in NADCA ACR.

END OF SECTION 233100

SECTION 233300 - AIR DUCT ACCESSORIES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Air turning devices/extractors.

B. Backdraft dampers - metal.

C. Duct access doors.

D. Duct test holes.

E. Flexible duct connectors.

F. Volume control dampers.

1.3 RELATED REQUIREMENTS

A. Section 233100 - HVAC Ducts and Casings.

1.4 REFERENCE STANDARDS

A. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems 2021.

B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2020.

1.5 SUBMITTALS

A. See Section 13300 - Submittal Procedures

B. Product Data: Provide for shop fabricated assemblies including volume control dampers. Include electrical characteristics and connection requirements.

C. Shop Drawings: Indicate for shop fabricated assemblies including volume control dampers.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 PRODUCTS

2.1 AIR TURNING DEVICES/EXTRACTORS

A. Multi-blade device with blades aligned in short dimension; steel construction; with individually adjustable blades, mounting straps.

2.2 BACKDRAFT DAMPERS - METAL

A. Gravity Backdraft Dampers, Size 18 by 18 inches (450 by 450 mm) or Smaller, Furnished with Air Moving Equipment: Air moving equipment manufacturer's standard construction.

2.3 DUCT ACCESS DOORS

A. Fabricate in accordance with SMACNA (DCS) and as indicated.

B. Fabrication: Rigid and close-fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ducts, install minimum 1 inch (25 mm) thick insulation with sheet metal cover.
1. Less Than 12 inches (300 mm) Square: Secure with sash locks.
2. Up to 18 inches (450 mm) Square: Provide two hinges and two sash locks.
3. Up to 24 by 48 inches (600 by 1200 mm): Three hinges and two compression latches with outside and inside handles.

C. Access doors with sheet metal screw fasteners are not acceptable.

2.4 DUCT TEST HOLES

A. Temporary Test Holes: Cut or drill in ducts as required. Cap with neat patches, neoprene plugs, threaded plugs, or threaded or twist-on metal caps.

2.5 FLEXIBLE DUCT CONNECTORS

A. Fabricate in accordance with SMACNA (DCS) and as indicated.

B. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd (1.0 kg/sq m).
a. Net Fabric Width: Approximately 2 inches (50 mm) wide.

2.6 VOLUME CONTROL DAMPERS

A. Fabricate in accordance with SMACNA (DCS) and as indicated.

B. Single Blade Dampers:
1. Fabricate for duct sizes up to 6 by 30 inch (150 by 760 mm).
2. Blade: 24 gage, 0.0239 inch (0.61 mm), minimum.

C. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 by 72 inch (200 by 1825 mm). Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
1. Blade: 18 gage, 0.0478 inch (1.21 mm), minimum.

D. End Bearings: Except in round ducts 12 inches (300 mm) and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon, thermoplastic elastomer, or sintered bronze bearings.

E. Quadrants:
1. Provide locking, indicating quadrant regulators on single and multi-blade dampers.
2. On insulated ducts mount quadrant regulators on stand-off mounting brackets, bases, or adapters.
3. Where rod lengths exceed 30 inches (750 mm) provide regulator at both ends.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS). Refer to Section 233100 for duct construction and pressure class.

B. Provide backdraft dampers on exhaust fans or exhaust ducts nearest to outside and where indicated.

C. Provide duct access doors for inspection and cleaning before and after filters, coils, fans, automatic dampers, at fire dampers, combination fire and smoke dampers, and elsewhere as indicated. Provide minimum 8 by 8 inch (200 by 200 mm) size for hand access, size for shoulder access, and as indicated. Provide 4 by 4 inch (100 by 100 mm) for balancing dampers only. Review locations prior to fabrication.

D. Provide duct test holes where indicated and required for testing and balancing purposes.

E. At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.

F. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct take-off.

G. Provide balancing dampers on duct take-off to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION 233300

SECTION 233700 - AIR OUTLETS AND INLETS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Diffusers:
   1. Rectangular ceiling diffusers.

B. Registers/grilles:
   1. Ceiling-mounted, exhaust and return register/grilles.

1.3 REFERENCE STANDARDS

A. ASHRAE Std 70 - Method of Testing the Performance of Air Outlets and Inlets 2006 (Reaffirmed 2011).

B. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible 2005 (Revised 2009).

1.4 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
   1. Ceiling suspension assembly members.
   2. Method of attaching hangers to building structure.
   3. Size and location of initial access modules for acoustical tile.
   4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
   5. Duct access panels.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures

B. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

1.6 QUALITY ASSURANCE

A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.

PART 2 PRODUCTS

2.1 CEILING DIFFUSERS

A. Type: Provide diffusers and accessories as scheduled on the Drawings.

B. All dampers for diffusers are to be operated from the face of the diffusers.

C. All diffusers 4 way blow unless otherwise noted on Drawings.

D. All diffusers in suspended acoustical tile ceilings shall be lay-in type with equalizing grids flush with the bottom of the ductwork, opposed blade dampers above the diffuser, and of steel construction with an off-white baked enamel finish.

E. All diffusers in gypsum board ceilings or mounted on ducts shall be flanged type.

F. Color: As indicated on drawings.

2.2 REGISTERS and GRILLES

A. Type: Provide registers and grilles with accessories as scheduled on Drawings.

B. All registers and grilles shall be constructed of steel with off-white baked enamel finish where installed in ceilings and prime coat aluminum finish for all other installations. Registers shall have opposed blade volume dampers. All supply registers and grilles shall be double deflection type with vertical face bars and horizontal back bars and to be provided with volume control deflectors where side mounted on ductwork and at collar connection to ductwork where ceiling mounted. See schedule on Drawings for types.

C. Fabrication: Steel with 20 gage, 0.0359 inch (0.91 mm) minimum frames and 22 gage, 0.0299 inch (0.76 mm) minimum blades, steel and aluminum with 20 gage, 0.0359 inch (0.91 mm) minimum frame, or aluminum extrusions, with factory baked enamel finish.

D. Color: As indicated on the drawings.

E. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face where not individually connected to exhaust fans.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Outlets and Inlets Locations: Drawings indicate general arrangement of ducts, fittings, and accessories. Air outlet and inlet locations have been indicated to achieve design requirements for air volume, noise criteria, airflow pattern, throw, and pressure drop. Make final locations where indicated, as much as practical.
   1. For units installed in lay-in ceiling panels, locate units in the center of panel.
   2. Where architectural features or other items conflict with installation, notify Architect for a determination of final location.

C. Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.

D. Install diffusers to ductwork with air tight connection.

E. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION 233700

SECTION 236313 - AIR COOLED REFRIGERANT CONDENSERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Manufactured units.

B. Casing.

C. Condenser coils.

D. Fan requirements.

E. Controls.

1.3 RELATED REQUIREMENTS

A. Section 238124 - Computer Room Air Conditioners - Floor Mounted

B. Section 033000 - Cast-in-Place Concrete: Equipment bases.

C. Section 232300 - Refrigerant Piping.

D. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.

1.4 REFERENCE STANDARDS

A. AHRI 210/240 - Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment 2008, Including All Addenda.

B. ASHRAE Std 15 - Safety Standard for Refrigeration Systems 2019, with All Amendments and Errata.

C. ASHRAE Std 20 - Methods of Laboratory Testing Remote Mechanical-Draft Air-Cooled Refrigerant Condensers 2019.

D. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. UL 207 - Standard for Refrigerant-Containing Components and Accessories, Nonelectrical Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures

B. Product Data: Provide rated capacities, weights, accessories, electrical requirements, and wiring diagrams.

C. Shop Drawings: Indicate components, assembly, dimensions, weights and loading, required clearances, and location and size of field connections. Include schematic layouts showing condenser, refrigeration compressors, cooling coils, refrigerant piping and accessories required for complete system.

D. Manufacturer's Instructions: Submit manufacturer's complete installation instructions.

E. Operation and Maintenance Data: Include start-up instructions, maintenance instructions, parts lists, controls, and accessories.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with manufacturer's installation instruction for rigging, unloading and transporting units.

B. Protect units on site from physical damage. Protect coils.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

2.2 MANUFACTURED UNITS

A. Provide packaged, factory assembled, pre-wired unit, suitable for outdoor use consisting of casing, condensing coil and fans, integral sub-cooling coil liquid accumulator.

B. Construction and Ratings: In accordance with AHRI 210/240 and UL 207. Testing shall be in accordance with ASHRAE Std 20.

C. Performance Ratings: Energy Efficient Rating (EER)/Coefficient of Performance (COP) not less than prescribed by ASHRAE Std 90.1 I-P, in combination with compressor units.

2.3 CASING

A. House components in aluminum sheets on galvanized steel frame. Legs to be aluminum.

B. Mount starters, disconnects, and controls in weatherproof panel provided with full opening access doors.

C. Provide removable access doors or panels with quick fasteners.

2.4 CONDENSER COILS

A. Coils: Aluminum microchannel constrcution. Tubes , finsm and laumuminum headers to be oven-brazed to form complete refrigerant to air heat exchnage coil. Provide with copper stub pipes. Air test under water to 300 psig (2900 kPa), and vacuum dehydrate. Seal with holding charge of nitrogen.

2.5 FAN REQUIREMENTS

A. Vertical discharge direct driven propeller type condenser fans with fan guard on discharge, equipped with roller or ball bearings with grease fittings extended to outside of casing.

B. Weatherproof motors suitable for outdoor use, single phase permanent split capacitor or 3 phase, with permanent lubricated ball bearings and built-in current and thermal overload protection.

2.6 CONTROLS

A. The Liebert premium efficiency condenser control system is complete with control board, EC fan

B. The control board receives a run signal from the compressor of the indoor unit via field-supplied low voltage interlock wires and field-supplied CANbus communication wires from the indoor unit iCOM. The control system provides refrigerant head pressure and system starting for outdoor ambient temperature as low as -30°F (-35 °C), provided the total temperature design range (from minimum to maximum) is 125°F (70°C) or less.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide for connection to electrical service. See Section 260583.

C. Align condensers on concrete foundations. See Section 033000

D. Provide connection to refrigeration piping system. See Section 232300. Comply with ASHRAE Std 15.

E. Provide cooling season start-up, winter season shut-down service, for first year of operation.

F. Shut-down system if initial start-up and testing takes place in winter and machines are to remain inoperative. Repeat start-up and testing operation at beginning of first cooling season.

END OF SECTION 236313

SECTION 238124 - COMPUTER ROOM AIR CONDITIONERS - FLOOR MOUNTED

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Air conditioning units.

B. Controls and control panels.

1.3 RELATED REQUIREMENTS

A. Section 236313 - Air Cooled Refrigerant Condensers.

B. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.

1.4 REFERENCE STANDARDS

A. ASHRAE Std 52.2 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size 2017, with Errata (2020).

B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

C. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems 2021.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures

B. Product Data: Provide for manufactured products and assemblies. Indicate water, drain, refrigeration, rough-in connections, and electrical characteristics and connection requirements.

C. Shop Drawings: Indicate manufactured products and assemblies. Indicate water, drain, refrigeration, rough-in connections, and electrical characteristics and connection requirements.

D. Manufacturer's Instructions: Indicate assembly, support details, connection requirements, and include start-up instructions.

E. Manufacturer's Field Reports: Indicate conditions at initial start-up including date, and initial set points.

F. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, and maintenance and repair data.

G. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Filters: One set for each individual unit.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of experience.

C. Comply with NFPA 90A for the installation of computer room air conditioning units.

D. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.7 WARRANTY

A. See Section 017700, for additional warranty requirements.

B. Warranty: Provide 1 year standard warranty for all parts, including labor for replacement. Provide 3 year extended warranty for all parts, including compressors, including labor for replacement.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Liebert, a brand of Vertiv Co: www.vertivco.com/#sle.

B. Substitutions: See Section 016000 - Product Requirements.

2.2 PERFORMANCE REQUIREMENTS

A. See Drawings:

2.3 AIR CONDITIONING UNITS

A. Description: Packaged, air cooled, factory assembled, pre-wired and pre-piped unit, consisting of cabinet, fans, filters, humidifier, and controls.

B. Assembly: Up-flow air delivery, in draw-through configuration.

C. Energy Efficiency:
1. See Drawings

2.4 CABINET AND FRAME

A. Structural Frame: 10 gauge, 0.1345 inch (3.42 mm) welded steel suitably braced for rigidity, capable of supporting compressors and other mechanical equipment and fittings.

B. Doors and Access Panels: 20 gauge, 0.0359 inch (0.91 mm) galvanized steel with polyurethane gaskets, hinges to allow removal of panels, and concealed fastening devices.

C. Insulation: Thermally and acoustically line cabinet interior with 1 inch (25 mm) thick acoustic duct liner.

D. Finish of Exterior Surfaces: Baked-on textured powder coated; Black Matte color.

E. Provide with discharge air plenum, top mounted, with supply grille.

2.5 EVAPORATOR FANS AND MOTORS

A. Fans: Double inlet, backward curved centrifugal fans, statically and dynamically balanced, directly driven.

2.6 COMPRESSORS

A. Type: Semi-hermetic with suction gas cooled motors, vibration isolators, thermal overloads, oil sight glass, manual reset high pressure switch, pump down low pressure switch, suction line strainer, reversible oil pumps, 1750 rpm.

B. Compressors: Individually serviceable without dismantling other components.

C. Refrigeration Circuits: Two, each with hot gas mufflers, thermal expansion valve with external equalizer, liquid line solenoid valve, liquid line filter-drier, refrigerant sight glass with moisture indicator, service shut-off valves and charging valves and accumulator sized for liquid seal under light load.

2.7 EVAPORATOR COILS

A. Single circuits, direct expansion cooling coils of seamless copper tubes expanded into aluminum fins in vertical flat face configuration.

B. Mount coil assembly in stainless steel drain pan.

2.8 CONDENSERS

A. Air Cooled Refrigerant Condenser:
1. Corrosion resistant cabinet.
2. Copper tube aluminum fin coils.
3. Direct drive propeller fans with permanently lubricated ball bearings.
4. EC motorswith internal overload protection, built-in controller and communication module with RS485 communitcation canle to control board.
5. Provide capacity control by varying the speed of the fan(s) through the control board..

2.9 FILTERS

A. Media: Pleated, lofted, non-woven, reinforced cotton fabric; supported and bonded to welded wire grid; enclosed in cardboard frame; 2 inch (50 mm) nominal thickness.

B. Minimum Efficiency Reporting Value (MERV): 8, when tested in accordance with ASHRAE Std 52.2.

2.10 REFRIGERANT REHEAT COIL

A. Hot gas refrigerant coil of seamless copper tubes expanded into aluminum fins with three way solenoid valve on first stage refrigerant circuit.

2.11 HUMIDIFIER

A. Infrared Type: High intensity quartz lamps mounted above stainless steel evaporator pan, serviceable without disconnecting water, drain, or electrical connections; pre-piped and utilizing city water stainless steel or brass float valve mechanism; located in bypass air stream; with flush cycle timer and solenoid

drain valve.

2.12 ELECTRICAL PANEL

A. See drawings for electrical requirements:

B. Control Cabinet: NEMA 250; Type 2 enclosure, UL listed, with piano hinged door, grounding lug, combination magnetic starters with overload relays, circuit breakers and cover interlock, and fusible control circuit transformer.

C. Disconnect Switch: Non-automatic molded case circuit breaker with handle accessible with panel closed and capable of preventing access until switched to "off" position.

2.13 MICROPROCESSOR CONTROL SYSTEM

A. Logic Circuitry: Microprocessor shall continuously monitor operation of process cooling system; continuously digitally display room temperature and room relative humidity; sound alarm on system malfunction and simultaneously display problem. When more than one malfunction occurs, display fault in sequence with room temperature, remember alarm even when malfunction cleared, and continue to display fault until reset.

B. Malfunctions: Power Loss, Loss of Air Flow, Clogged Air Filter, High Room Temperature, Low Room Temperature, High Humidity, Low Humidity, Smoke/Fire, Compressor No. 1 - Overload, Compressor No. 1 - Low Pressure, Compressor No. 1 - High Pressure, and Supply Fan Overload.

C. Light Emitting Diodes Display: Control Power On, System On, Humidification, De-humidification taking place, Compressor No. 1 operating, Compressor No. 2 operating, Heat or Reheat operating, Economy Cooling.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that proper power supply is available and of the correct characteristics.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Coordinate installation of computer room air conditioning units with all other trades.

C. Provide unit with anti-static pad and install under unit..

3.3 FIELD QUALITY CONTROL

A. Provide the services of the manufacturer's field representative to start and adjust systems and equipment and instruct operating personnel.

3.4 SYSTEM STARTUP

A. Prepare and start systems. Set initial temperature and humidity set points.

3.5 MAINTENANCE

A. Provide service and maintenance of computer room air conditioning unit system for one year from Date of Substantial Completion.

END OF SECTION 238124

SECTION 238200 - CONVECTION HEATING AND COOLING UNITS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Electric cabinet unit heaters.

1.3 RELATED REQUIREMENTS

A. Section 230513 - Common Motor Requirements for HVAC Equipment.

B. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections. Installation of room thermostats. Electrical supply to units.

1.4 REFERENCE STANDARDS

A. AHRI Directory of Certified Product Performance - Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Current Edition.

B. AHRI 410 - Forced-Circulation Air-Cooling and Air-Heating Coils 2001, with Addenda (2011).

1.5 SUBMITTALS

A. See Section 013300 Submittal Procedures

B. Product Data: Provide typical catalog of information including arrangements.

C. Shop Drawings:
   1. Submit the following for blower-coil units indicating:
      a. Overall dimensions including installation, operation, and service clearances.
      b. Lift points, recommendations, and center of gravity.
      c. Unit shopping, installation, and operating weights including dimensions.
      d. Fan curves with specified operating point clearly plotted.
      e. Safety and start-up instructions.
   2. Indicate mechanical and electrical service locations and requirements.

D. Manufacturer's Instructions: Indicate installation instructions and recommendations.

E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.

F. Warranty: Submit manufacturer's warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements for additional provisions.
   2. Extra Filters: One set of each type and size.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 ELECTRIC CABINET UNIT HEATERS

A. Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL), Intertek (ETL), or testing firm acceptable to Authority Having Jurisdiction as suitable for the purpose indicated.

B. Heating Elements: Provide open-wire, finned tubular, or resistance wire enclosed in steel sheath.

C. Cabinet:
1. Minimum 18 gauge, 0.0478 inch (1.21 mm) thick steel front panel with exposed corners and edges rounded, easily removed panels, glass fiber insulation and integral air outlet, and inlet grilles.
2. Provide required hardware accessories for ceiling mounting.

D. Finish:
1. Factory applied, painted finish.
2. Color: As indicated on drawings.

E. Fan: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.

F. Controls:
1. 2-speed fan switch.
2. Built-in line-voltage thermostat.

G. Filter: Easily removed, 1 inch (25 mm) thick glass fiber throw-away type, located to filter air before coil.

H. Electrical Characteristics: See Drawings

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are suitable for installation.

B. Verify that field measurements are as indicated on drawings.

3.2 INSTALLATION

A. Install in accordance with manufacturer's recommendations.

B. Install equipment exposed to finished areas after walls and ceilings are finished and painted.

C. Cabinet Unit Heaters:
1. Install as indicated.
2. Coordinate to ensure correct recess size for recessed units.

D. Units with Electric Heating Elements:
   1. Install as indicated including electrical devices furnished by manufacturer but not factory installed.
   2. Install wiring in accordance with the manufacturer's wiring diagram submittal and Section 260583.

3.3 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements for additional requirements.

3.4 CLEANING

A. After construction and painting is completed, clean exposed surfaces of units.

B. Touch-up marred or scratched surfaces of factory-finished cabinets using finish materials furnished by the manufacturer.

C. Install new filters.

3.5 PROTECTION

A. Provide finished cabinet units with protective covers during the balance of construction.

END OF SECTION 238200

MONTGOMERY COUNTY NY

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DIVISION 26

Electrical

SECTION 260505 - SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 RELATED REQUIREMENTS

A. Section 013516 - Alteration Project Procedures

B. Section 024119 - Sec

1.3 SECTION INCLUDES

A. Electrical demolition.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify field measurements and circuiting arrangements are as indicated.

B. Verify that abandoned wiring and equipment serve only abandoned facilities.

C. Demolition drawings are based on casual field observation and existing record documents.

D. Report discrepancies to Architect before disturbing existing installation.

E. Beginning of demolition means installer accepts existing conditions.

3.2 PREPARATION

A. Disconnect electrical systems in walls, floors, and ceilings to be removed.

B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

C. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.
   1. Make temporary connections to maintain service in areas adjacent to work area.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
   1. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, ignitron tubes, neon, and incandescent.

B. Remove, relocate, and extend existing installations to accommodate new construction.

C. Remove abandoned wiring to source of supply.

D. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

E. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

F. Disconnect and remove abandoned panelboards and distribution equipment.

G. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.

H. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.

I. Repair adjacent construction and finishes damaged during demolition and extension work.

J. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.4 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment that remain or that are to be reused.

B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION 260505

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Single conductor building wire.

B. Underground feeder and branch-circuit cable.

C. Metal-clad cable.

D. Wiring connectors.

E. Electrical tape.

F. Heat shrink tubing.

G. Oxide inhibiting compound.

H. Wire pulling lubricant.

I. Cable ties.

J. Firestop sleeves.

1.3 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

B. Section 260505 - Selective Demolition for Electrical: Disconnection, removal, and/or extension of existing electrical conductors and cables.

C. Section 260526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.

D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

E. Section 284600 - Fire Detection and Alarm: Fire alarm system conductors and cables.

1.4 REFERENCE STANDARDS

A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).

B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft 2011 (Reapproved 2017).

C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes 2010, with Editorial Revision (2020).

D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation 2004 (Reapproved 2020).

E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape 2017.

F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes 2020.

G. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

H. NECA 120 - Standard For Installing Armored Cable (Type AC) And Metal-Clad Cable (Type MC) 2018.

I. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy 2021.

J. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.

K. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. UL 44 - Thermoset-Insulated Wires and Cables Current Edition, Including All Revisions.

M. UL 83 - Thermoplastic-Insulated Wires and Cables Current Edition, Including All Revisions.

N. UL 486A-486B - Wire Connectors Current Edition, Including All Revisions.

O. UL 486C - Splicing Wire Connectors Current Edition, Including All Revisions.

P. UL 486D - Sealed Wire Connector Systems Current Edition, Including All Revisions.

Q. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape Current Edition, Including All Revisions.

R. UL 1569 - Metal-Clad Cables Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
   2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
   3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.9 FIELD CONDITIONS

A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F (-10 degrees C), unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.1 CONDUCTOR AND CABLE APPLICATIONS

A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.

B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.

C. Nonmetallic-sheathed cable is not permitted.

D. Armored cable is not permitted.

2.2 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

A. Provide products that comply with requirements of NFPA 70.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Provide new conductors and cables manufactured not more than one year prior to installation.

D. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.

E. Comply with NEMA WC 70.

F. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.

G. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.

H. Conductors for Grounding and Bonding: Also comply with Section 260526.

I. Conductors and Cables Installed Where Exposed to Direct Rays of Sun: Listed and labeled as sunlight resistant.

J. Conductors and Cables Installed Exposed in Spaces Used for Environmental Air (only where specifically permitted): Plenum rated, listed and labeled as suitable for use in return air plenums.

K. Conductor Material:
1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.

2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
3. Tinned Copper Conductors: Comply with ASTM B33.

L. Minimum Conductor Size:
1. Branch Circuits: 12 AWG.
a. Exceptions:
1) 20 A, 120 V circuits longer than 75 feet (23 m): 10 AWG, for voltage drop.
2) 20 A, 120 V circuits longer than 150 feet (46 m): 8 AWG, for voltage drop.
3) 20 A, 277 V circuits longer than 150 feet (46 m): 10 AWG, for voltage drop.
2. Control Circuits: 14 AWG.

M. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

N. Conductor Color Coding:
1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
2. Color Coding Method: Integrally colored insulation.
a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
3. Color Code:
a. 480Y/277 V, 3 Phase, 4 Wire System:
1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.
4) Neutral/Grounded: Gray.
b. 208Y/120 V, 3 Phase, 4 Wire System:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral/Grounded: White.
c. Equipment Ground, All Systems: Green.
d. Isolated Ground, All Systems: Green with yellow stripe.
e. Travelers for 3-Way and 4-Way Switching: Pink.
f. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.
g. For control circuits, comply with manufacturer's recommended color code.

2.3 SINGLE CONDUCTOR BUILDING WIRE

A. Manufacturers:
1. Copper Building Wire:
a. Cerro Wire LLC: www.cerrowire.com/#sle.
b. Encore Wire Corporation: www.encorewire.com/#sle.
c. General Cable Technologies Corporation: www.generalcable.com/#sle.
d. Southwire Company: www.southwire.com/#sle.

B. Description: Single conductor insulated wire.

C. Conductor Stranding:
1. Feeders and Branch Circuits:
a. Size 10 AWG and Smaller: Solid or Standed.
b. Size 8 AWG and Larger: Stranded.

2. Control Circuits: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation:
1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
a. Size 4 AWG and Larger: Type XHHW-2.

2.4 METAL-CLAD CABLE

A. Manufacturers:
1. AFC Cable Systems Inc: www.afcweb.com/#sle.
2. Encore Wire Corporation: www.encorewire.com/#sle.
3. Southwire Company: www.southwire.com/#sle.

B. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.

C. Conductor Stranding:
1. Size 10 AWG and Smaller: Solid or Stranded.
2. Size 8 AWG and Larger: Stranded.

D. Insulation Voltage Rating: 600 V.

E. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.

F. Provide oversized neutral conductors where indicated or required.

G. Provide dedicated neutral conductor for each phase conductor where indicated or required.

H. Grounding: Full-size integral equipment grounding conductor.
1. Provide additional isolated/insulated grounding conductor where indicated or required.

I. Armor: Steel, interlocked tape.

2.5 WIRING CONNECTORS

A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.

B. Connectors for Grounding and Bonding: Comply with Section 260526.

C. Wiring Connectors for Splices and Taps:
1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.

D. Wiring Connectors for Terminations:
1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
4. Provide motor pigtail connectors for connecting motor leads in order to facilitate disconnection.

5. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
6. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
7. Conductors for Control Circuits: Use crimped terminals for all connections.

E. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.

F. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.

G. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F (105 degrees C) for standard applications and 302 degrees F (150 degrees C) for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
1. Manufacturers:
   a. 3M: www.3m.com/#sle.
   b. Ideal Industries, Inc: www.idealindustries.com/#sle.
   c. NSI Industries LLC: www.nsiindustries.com/#sle.

H. Mechanical Connectors: Provide bolted type or set-screw type.
1. Manufacturers:
   a. Burndy LLC: www.burndy.com/#sle.
   b. Ilsco: www.ilsco.com/#sle.
   c. Thomas & Betts Corporation: www.tnb.com/#sle.

I. Compression Connectors: Provide circumferential type or hex type crimp configuration.
1. Manufacturers:
   a. Burndy LLC: www.burndy.com/#sle.
   b. Ilsco: www.ilsco.com/#sle.
   c. Thomas & Betts Corporation: www.tnb.com/#sle.

J. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.
1. Manufacturers:
   a. Burndy LLC: www.burndy.com/#sle.
   b. Ilsco: www.ilsco.com/#sle.
   c. Thomas & Betts Corporation: www.tnb.com/#sle.

2.6 ACCESSORIES

A. Electrical Tape:
1. Manufacturers:
   a. 3M: www.3m.com/#sle.
   b. Plymouth Rubber Europa: www.plymouthrubber.com/#sle.
2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
4. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil (0.76 mm); suitable for continuous temperature environment up to 194 degrees F (90 degrees C) and short-term 266 degrees F (130 degrees C) overload

service.

5. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil (3.2 mm); suitable for continuous temperature environment up to 176 degrees F (80 degrees C).

B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.

C. Oxide Inhibiting Compound: Listed; suitable for use with the conductors or cables to be installed.
1. Manufacturers:
a. Burndy LLC: www.burndy.com/#sle.
b. Ideal Industries, Inc: www.idealindustries.com/#sle.
c. Ilsco: www.ilsco.com/#sle.

D. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
1. Manufacturers:
a. 3M: www.3m.com/#sle.
b. American Polywater Corporation: www.polywater.com/#sle.
c. Ideal Industries, Inc: www.idealindustries.com/#sle.

E. Cable Ties: Material and tensile strength rating suitable for application.
1. Manufacturers:
a. Burndy LLC: www.burndy.com/#sle.

F. Sealing Systems for Roof Penetrations: Premanufactured components and accessories as required to preserve integrity of roofing system and maintain roof warranty; suitable for cables and roofing system to be installed; designed to accommodate existing penetrations where applicable.
1. Products:
a. Menzies Metal Products; Electrical Roof Stack and Cap: www.menzies-metal.com/#sle.

G. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.
1. Products:
a. HoldRite, a brand of Reliance Worldwide Corporation; HydroFlame Pro Series/HydroFlame Custom Built: www.holdrite.com/#sle.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that interior of building has been protected from weather.

B. Verify that work likely to damage wire and cable has been completed.

C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.

D. Verify that field measurements are as indicated.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.3 INSTALLATION

A. Circuiting Requirements:
   1. Unless dimensioned, circuit routing indicated is diagrammatic.
   2. When circuit destination is indicated without specific routing, determine exact routing required.
   3. Arrange circuiting to minimize splices.
   4. Include circuit lengths required to install connected devices within 10 ft (3.0 m) of location indicated.
   5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
   6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
   7. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
      a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
      b. Increase size of conductors as required to account for ampacity derating.
      c. Size raceways, boxes, etc. to accommodate conductors.
   8. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
      a. Branch circuits fed from ground fault circuit interrupter (GFCI) circuit breakers.
      b. Branch circuits fed from feed-through protection of GFI receptacles.
      c. Branch circuits with dimming controls.
      d. Branch circuits with isolated grounding conductor.

B. Install products in accordance with manufacturer's instructions.

C. Perform work in accordance with NECA 1 (general workmanship).

D. Install metal-clad cable (Type MC) in accordance with NECA 120.

E. Installation in Raceway:
   1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
   2. Pull all conductors and cables together into raceway at same time.
   3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
   4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.

F. Exposed Cable Installation (only where specifically permitted):
   1. Route cables parallel or perpendicular to building structural members and surfaces.
   2. Protect cables from physical damage.

G. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.

H. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
   1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
   2. Installation in Vertical Raceways: Provide supports where vertical rise exceeds permissible limits.

I. Terminate cables using suitable fittings.
   1. Metal-Clad Cable (Type MC):
      a. Use listed fittings.
      b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.

J. Install conductors with a minimum of 12 inches (300 mm) of slack at each outlet.

K. Where conductors are installed in enclosures for future termination by others, provide a minimum of 5 feet (1.5 m) of slack.

L. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.

M. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

N. Make wiring connections using specified wiring connectors.
1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
3. Do not remove conductor strands to facilitate insertion into connector.
4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

O. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.

P. Insulate ends of spare conductors using vinyl insulating electrical tape.

Q. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.

R. Identify conductors and cables in accordance with Section 260553.

S. Install firestopping to preserve fire resistance rating of partitions and other elements.

T. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.4 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.

C. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION 260519

SECTION 260519.13 - UNDERCARPET ELECTRICAL POWER CABLES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Undercarpet cable systems and associated components:
   1. Undercarpet power cable.
   2. Undercarpet communications cable.
   3. Service fittings.
   4. Transition fittings.
   5. Accessories.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.

C. Section 260533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.

D. Section 260533.16 - Boxes for Electrical Systems: Installation requirements for transition fittings specified in this section.

E. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

F. Section 271000 - Structured Cabling.

1.4 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

B. NEMA UC 2 - Undercarpet Power Distribution Systems 1993 (Reaffirmed 2015).

C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

D. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards 2009c, with Addendum (2016).

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of service fittings with furniture, equipment, etc. installed under other sections or by others.
   2. Coordinate rough-in of conduit provided under Section 260533.13 as required for installation of transition fittings provided under this section.

3. Coordinate the work with other trades to provide carpet tile suitable for installation over undercarpet cables in accordance with NFPA 70.
4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Preinstallation Meeting: Convene one week prior to commencing work of this section; require attendance of all affected installers. Review proposed routing, sequence of installation, and protection requirements for installed undercarpet cable system.

C. Sequencing:
1. Do not begin installation of carpet tile until installation of undercarpet cable system is complete.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for undercarpet cable system components and accessories. Include dimensions, materials, fabrication details, and finishes.

C. Shop Drawings: Include dimensioned plan views indicating proposed undercarpet cable types and routing, service fitting types and locations, and circuiting arrangements.

D. Project Record Documents: Record actual installed locations of undercarpet cables, transition fittings, and service fittings. Include actual installed circuiting arrangements.

E. Operation and Maintenance Data: Include instructions for adding and removing service fittings, and for extending cables.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. CommScope: www.commscope.com/#sle.

B. Or Approved Equal.

2.2 UNDERCARPET CABLE SYSTEM

A. Provide new undercarpet cable system consisting of all required components, fittings, devices, accessories, etc. as necessary for a complete system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Do not use undercarpet cables for applications other than as permitted by NFPA 70 and product listing/classification.

D. Undercarpet Power Cable: Listed NFPA 70 Type FCC flat conductor cable complying with NEMA UC 2; number of conductors as indicated or as required.
1. Conductor Size: 12 AWG.
2. Provide full-size integral insulated equipment grounding conductor.

E. Undercarpet Communications Cable: Listed NFPA 70 Type CMUC undercarpet cable; 4-pair UTP (unshielded twisted pair); TIA-568.2 Category 6.

F. Service Fittings: Undercarpet cable system manufacturer's floor fittings designed specifically for connection to undercarpet cables to be installed with all components, adapters, and trims required for

complete installation.

1. Finish: Standard color to be selected by Architect..
2. Voice and Data Jacks: As specified in Section 271000.
3. Single Service Standard Convenience Receptacle:
   a. Configuration: Two 20 A, 125 V, NEMA 5-20R standard duplex receptacle(s).
4. Single Service Communications Outlet:
   a. Configuration: Four ports; accepts up to four modular jacks/inserts.

G. Transition Fittings: Undercarpet cable system manufacturer's transition boxes and transition blocks for interface between conventional premises wiring systems and undercarpet cables.

H. Accessories:
1. Floor Preparation Material for Undercarpet Cables: Undercarpet cable system manufacturer's floor preparation material designed to protect cable from floor moisture, chemical reaction, and abrasion.
   a. Applications: Provide on floor surface along undercarpet power cable path for slab-on-grade and sub-grade level applications.
2. Connectors for Undercarpet Power Cables: Undercarpet cable system manufacturer's insulation-piercing tap and splice connectors designed specifically for connections to undercarpet power cables to be installed.
3. Insulator Assemblies for Undercarpet Power Cables: Undercarpet cable system manufacturer's adhesive-faced material for insulation of connections and exposed conductors.
4. Top Shield for Undercarpet Cables: Undercarpet cable system manufacturer's corrosion-resistant steel cover for physical protection of cable; utilize bonding clips for connections between top shield and fittings and between adjacent sections of top shield.
   a. Applications: Provide over undercarpet power cables.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that work likely to damage undercarpet cable system has been completed.

B. Verify that field measurements are as indicated.

C. Verify that floor surfaces are smooth, free of irregularities, and suitable for undercarpet cable system.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Scrape, patch, clean, and vacuum floor in accordance with manufacturer's instructions.

3.3 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Undercarpet Cable Routing:
1. Unless otherwise indicated, arrange undercarpet cables to be parallel or perpendicular to building lines.
2. Arrange undercarpet cables to minimize number of cable crossing points. Where crossing points occur, limit crossing to no more than two cables in accordance with NFPA 70. Separate cables at crossing points with layer of grounded top shield.

D. Use only manufacturer's supplied or recommended materials (e.g. tape, spray adhesive) for securing undercarpet cable system components. Provide additional support and attachment components in accordance with Section 260529 as required for securing fittings.

E. Install transition fittings provided under this section in accordance with requirements for boxes specified in Section 260533.16.

F. Install floor preparation material on floor surface along undercarpet cable path where specified under PART 2 above .

G. Undercarpet Power Cable Installation:
1. Connect undercarpet power cables to premises power wiring system at transition fittings.
2. For changes in undercarpet power cable direction, use overlapping fold in accordance with manufacturer's instructions.
3. Connect undercarpet power cables together using tap or splice connectors and insulator assemblies as required. Use only manufacturer's supplied or recommended crimping tool for securing connections.
4. Install insulator assemblies at dead ends.

H. Undercarpet Communications Cable Installation:
1. Connect undercarpet communications cables to premises communications wiring system at transition fittings.
2. For changes in undercarpet communications cable direction, use cable bend with radius not less than 10 inches (250 mm) or as recommended by manufacturer. Use only manufacturer's supplied or recommended cable notching tool to facilitate cable bending.

I. Install service fittings, ensuring proper conductor connections.

J. Test undercarpet power cable conductors for continuity prior to installation of top shield.

K. Install top shield over undercarpet power cables, using manufacturer's supplied bonding clips at taps, splices, and changes in direction to achieve ground continuity of shield for entire power circuit path.

L. Provide grounding and bonding in accordance with Section 260526.

M. Identify conductors and devices in accordance with Section 260553.

3.4 FIELD QUALITY CONTROL

A. Inspect undercarpet cable system components for damage and defects.

B. Energize and test each device to verify operation and proper polarity prior to installation of carpet tile.

C. Correct deficiencies and replace damaged or defective undercarpet cable system components.

3.5 PROTECTION

A. Protect undercarpet cable system from subsequent construction operations. Do not allow traffic over undercarpet cable system until carpet tile is installed.

END OF SECTION 260519.13

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Grounding and bonding requirements.

B. Conductors for grounding and bonding.

C. Connectors for grounding and bonding.

1.3 RELATED REQUIREMENTS

A. Section 260519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
   1. Includes oxide inhibiting compound.

B. Section 260536 - Cable Trays for Electrical Systems: Additional grounding and bonding requirements for cable tray systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

1.4 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

B. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.

C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

D. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

1.5 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.

C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

D. Field quality control test reports.

1.6 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING REQUIREMENTS

A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.

B. Do not use products for applications other than as permitted by NFPA 70 and product listing.

C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.

D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

E. Separately Derived System Grounding:
1. Separately derived systems include, but are not limited to:
   a. Generators, when neutral is switched in the transfer switch.
2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
4. Outdoor Source: Where the source of the separately derived system is located outside the building or structure supplied, provide connection to grounding electrode at source in accordance with NFPA 70.
5. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
6. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.

F. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.

6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
7. Provide bonding for interior metal air ducts.

G. Isolated Ground System:
1. Where isolated ground receptacles or other isolated ground connections are indicated, provide separate isolated/insulated equipment grounding conductors.
2. Connect isolated/insulated equipment grounding conductors only to separate isolated/insulated equipment ground busses.
3. Connect the isolated/insulated equipment grounding conductors to the solidly bonded equipment ground bus only at the service disconnect or separately derived system disconnect. Do not make any other connections between isolated ground system and normal equipment ground system on the load side of this connection.

H. Communications Systems Grounding and Bonding:
1. Provide intersystem bonding termination at service equipment or metering equipment enclosure and at disconnecting means for any additional buildings or structures in accordance with NFPA 70.

2.2 GROUNDING AND BONDING COMPONENTS

A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
2. Provide products listed and labeled as complying with UL 467 where applicable.

B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 260526:
1. Use insulated copper conductors unless otherwise indicated.
a. Exceptions:
1) Use bare copper conductors where installed underground in direct contact with earth.
2) Use bare copper conductors where directly encased in concrete (not in raceway).

C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
4. Manufacturers - Mechanical and Compression Connectors:
a. Advanced Lightning Technology (ALT): www.altfab.com/#sle.
b. Burndy LLC: www.burndy.com/#sle.
c. Harger Lightning & Grounding: www.harger.com/#sle.
d. Thomas & Betts Corporation: www.tnb.com/#sle.
5. Manufacturers - Exothermic Welded Connections:
a. Burndy LLC: www.burndy.com/#sle.
b. Cadweld, a brand of Erico International Corporation: www.erico.com/#sle.
c. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: www.thermoweld.com/#sle.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that work likely to damage grounding and bonding system components has been completed.

B. Verify that field measurements are as indicated.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Make grounding and bonding connections using specified connectors.
   1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
   2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
   3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
   4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
   5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.

D. Identify grounding and bonding system components in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.13.

C. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.

D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

E. Submit detailed reports indicating inspection and testing results and corrective actions taken.

END OF SECTION 260526

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.3 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Concrete equipment pads.

B. Section 260533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.

C. Section 260533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

D. Section 260548 - Vibration and Seismic Controls for Electrical Systems.

E. Section 265100 - Interior Lighting: Additional support and attachment requirements for interior luminaires.

1.4 REFERENCE STANDARDS

A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.

C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.

D. MFMA-4 - Metal Framing Standards Publication 2004.

E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. UL 5B - Strut-Type Channel Raceways and Fittings Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
2. Coordinate the work with other trades to provide additional framing and materials required for installation.
3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.

C. Shop Drawings: Include details for fabricated hangers and supports where materials or methods other than those indicated are proposed for substitution.

1.7 QUALITY ASSURANCE

A. Comply with NFPA 70.

B. Comply with applicable building code.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
3. Do not use products for applications other than as permitted by NFPA 70 and product listing.
4. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
   a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
   b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
   c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
   d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Components for Vibration Isolation and/or Seismic Controls: Comply with Section 260548.

C. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.
3. Manufacturers:
a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
b. Erico International Corporation: www.erico.com/#sle.
c. HoldRite, a brand of Reliance Worldwide Corporation: www.holdrite.com/#sle.
d. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
e. Thomas & Betts Corporation: www.tnb.com/#sle.

D. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
1. Manufacturers:
a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
b. Erico International Corporation: www.erico.com/#sle.
c. HoldRite, a brand of Reliance Worldwide Corporation: www.holdrite.com/#sle.
d. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
e. Thomas & Betts Corporation: www.tnb.com/#sle.

E. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
1. Comply with MFMA-4.
2. Channel (Strut) Used as Raceway (only where specifically indicated): Listed and labeled as complying with UL 5B.
3. Channel Material:
a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
4. Minimum Channel Thickness: Steel sheet, 12 gage, 0.1046 inch (2.66 mm).
5. Minimum Channel Dimensions: 1-5/8 inch (41 mm) width by 13/16 inch (21 mm) height.
6. Manufacturers:
a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com/#sle.
b. Thomas & Betts Corporation: www.tnb.com/#sle.
c. Unistrut, a brand of Atkore International Inc: www.unistrut.com/#sle.
d. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.

F. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
1. Minimum Size, Unless Otherwise Indicated or Required:
a. Equipment Supports: 1/2 inch (13 mm) diameter.
b. Single Conduit up to 1 inch (27 mm) trade size: 1/4 inch (6 mm) diameter.
c. Single Conduit larger than 1 inch (27 mm) trade size: 3/8 inch (10 mm) diameter.
d. Trapeze Support for Multiple Conduits: 3/8 inch (10 mm) diameter.
e. Outlet Boxes: 1/4 inch (6 mm) diameter.
f. Luminaires: 1/4 inch (6 mm) diameter.

G. Non-Penetrating Rooftop Supports for Low-Slope Roofs: Steel pedestals with thermoplastic or rubber bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified.
1. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
2. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports.
3. Mounting Height: Provide minimum clearance of 6 inches (150 mm) under supported component to top of roofing.
4. Manufacturers:
a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com/#sle.

b. Erico International Corporation: www.erico.com/#sle.
c. PHP Systems/Design: www.phpsd.com/#sle.
d. Unistrut, a brand of Atkore International Inc: www.unistrut.com/#sle.

H. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Hollow Masonry: Use toggle bolts.
5. Steel: Use beam clamps, machine bolts, or welded threaded studs.
6. Sheet Metal: Use sheet metal screws.
7. Wood: Use wood screws.
8. Plastic and lead anchors are not permitted.
9. Powder-actuated fasteners are not permitted.
10. Hammer-driven anchors and fasteners are not permitted.
11. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
a. Comply with MFMA-4.
b. Channel Material: Use galvanized steel.
c. Manufacturer: Same as manufacturer of metal channel (strut) framing system.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.

E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.

F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

G. Provide required vibration isolation and/or seismic controls in accordance with Section 260548.

H. Equipment Support and Attachment:
1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.

3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Unless otherwise indicated, mount floor-mounted equipment on properly sized 3 inch (80 mm) high concrete pad constructed in accordance with Section 033000.
5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

I. Conduit Support and Attachment: Also comply with Section 260533.13.

J. Interior Luminaire Support and Attachment: Also comply with Section 265100.

K. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.

L. Secure fasteners according to manufacturer's recommended torque settings.

M. Remove temporary supports.

N. Identify independent electrical component support wires above accessible ceilings (only where specifically indicated or permitted) with color distinguishable from ceiling support wires in accordance with NFPA 70.

3.3 FIELD QUALITY CONTROL

A. Inspect support and attachment components for damage and defects.

B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

C. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION 260529

SECTION 260533.13 - CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Galvanized steel rigid metal conduit (RMC).

B. Liquidtight flexible metal conduit (LFMC).

C. Electrical metallic tubing (EMT).

D. Rigid polyvinyl chloride (PVC) conduit.

E. Conduit fittings.

1.3 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

B. Section 260529 - Hangers and Supports for Electrical Systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

1.4 REFERENCE STANDARDS

A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2020.

B. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2013.

C. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) 2017.

D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.

E. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing 2021.

F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.

H. UL 360 - Liquid-Tight Flexible Metal Conduit Current Edition, Including All Revisions.

I. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.

J. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
   2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
   3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
   4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
   5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:
   1. Under Slab on Grade: Use galvanized steel rigid metal conduit or rigid PVC conduit.
   2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit or rigid PVC conduit.
   3. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit where emerging from underground.
   4. Where rigid polyvinyl (PVC) conduit larger than 2 inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit elbows for bends.
   5. Where steel conduit is installed in direct contact with earth where soil has a resistivity of less than 2000 ohm-centimeters or is characterized as severely corrosive based on soils report or local experience, use corrosion protection tape to provide supplementary corrosion protection or use PVC-coated galvanized steel rigid metal conduit.

D. Concealed Within Masonry Walls: Use electrical metallic tubing (EMT).

E. Concealed Within Hollow Stud Walls: Use electrical metallic tubing (EMT).

F. Concealed Above Accessible Ceilings: Use electrical metallic tubing (EMT).

G. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.

H. Exposed, Interior, Not Subject to Physical Damage: Use electrical metallic tubing (EMT).

I. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.
   1. Locations subject to physical damage include, but are not limited to:
      a. Where exposed below 8 feet (2.4 m) in Mechanical Rooms.

J. Exposed, Exterior: Use galvanized steel rigid metal conduit.

2.2 CONDUIT REQUIREMENTS

A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.

B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Minimum Conduit Size, Unless Otherwise Indicated:
   1. Branch Circuits: 3/4 inch (21 mm) trade size.
   2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
   3. Underground, Interior: 3/4 inch (21 mm) trade size.
   4. Underground, Exterior: 1 inch (27 mm) trade size.

E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.3 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

A. Manufacturers:
   1. Allied Tube & Conduit: www.alliedeg.com/#sle.
   2. Republic Conduit: www.republic-conduit.com/#sle.
   3. Wheatland Tube, a Division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.

C. Fittings:
   1. Manufacturers:
      a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
      b. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
      c. Thomas & Betts Corporation: www.tnb.com/#sle.
   2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
   3. Material: Use steel or malleable iron.
   4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

A. Manufacturers:
1. AFC Cable Systems, Inc: www.afcweb.com/#sle.
2. Electri-Flex Company: www.electriflex.com/#sle.
3. International Metal Hose: www.metalhose.com/#sle.

B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
b. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com/#sle.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel or malleable iron.

2.5 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:
1. Allied Tube & Conduit: www.alliedeg.com/#sle.
2. Republic Conduit: www.republic-conduit.com/#sle.
3. Wheatland Tube, a Division of Zekelman Industries: www.wheatland.com/#sle.

B. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.

C. Fittings:
1. Manufacturers:
a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
b. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
c. Thomas & Betts Corporation: www.tnb.com/#sle.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
3. Material: Use steel or malleable iron.
4. Connectors and Couplings: Use compression (gland) or set-screw type.
a. Do not use indenter type connectors and couplings.

2.6 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Manufacturers:
1. Cantex Inc: www.cantexinc.com/#sle.
2. Carlon, a brand of Thomas & Betts Corporation: www.carlon.com/#sle.
3. JM Eagle: www.jmeagle.com/#sle.

B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.

C. Fittings:
1. Manufacturer: Same as manufacturer of conduit to be connected.

2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive conduits.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.

D. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.

E. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
2. When conduit destination is indicated without specific routing, determine exact routing required.
3. Conceal all conduits unless specifically indicated to be exposed.
4. Conduits in the following areas may be exposed, unless otherwise indicated:
   a. Electrical rooms.
   b. Mechanical equipment rooms.
   c. Within joists in areas with no ceiling.
5. Unless otherwise approved, do not route conduits exposed:
   a. Across floors.
   b. Across roofs.
   c. Across top of parapet walls.
   d. Across building exterior surfaces.
6. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
7. Arrange conduit to maintain adequate headroom, clearances, and access.
8. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
9. Arrange conduit to provide no more than 150 feet (46 m) between pull points.
10. Route conduits above water and drain piping where possible.
11. Group parallel conduits in the same area together on a common rack.

F. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 260529 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
4. Use conduit strap to support single surface-mounted conduit.

a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.

5. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
7. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
8. Use non-penetrating rooftop supports to support conduits routed across rooftops (only where approved).
9. Use of spring steel conduit clips for support of conduits is not permitted.
10. Use of wire for support of conduits is not permitted.
11. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with the most stringent requirements.

G. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
6. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
7. Secure joints and connections to provide maximum mechanical strength and electrical continuity.

H. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
2. Make penetrations perpendicular to surfaces unless otherwise indicated.
3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
4. Conceal bends for conduit risers emerging above ground.
5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
8. Provide metal escutcheon plates for conduit penetrations exposed to public view.
9. Install firestopping to preserve fire resistance rating of partitions and other elements.

I. Underground Installation:
1. Minimum Cover, Unless Otherwise Indicated or Required:
a. Underground, Exterior: 24 inches (610 mm).
b. Under Slab on Grade: 12 inches (300 mm) to bottom of slab.

J. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.

2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
3. Where conduits are subject to earth movement by settlement or frost.

K. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
1. Where conduits pass from outdoors into conditioned interior spaces.
2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.

L. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches (300 mm) at each end.

M. Provide grounding and bonding in accordance with Section 260526.

N. Identify conduits in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.

B. Correct deficiencies and replace damaged or defective conduits.

3.4 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.5 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION 260533.13

SECTION 260533.16 - BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Outlet and device boxes up to 100 cubic inches (1,650 cu cm), including those used as junction and pull boxes.

B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches (1,650 cu cm).

C. Boxes and enclosures for integrated power, data, and audio/video.

D. Floor boxes.

E. Accessories.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.

C. Section 260533.13 - Conduit for Electrical Systems:
   1. Conduit bodies and other fittings.
   2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.

D. Section 260548 - Vibration and Seismic Controls for Electrical Systems.

E. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

F. Section 262726 - Wiring Devices:
   1. Wall plates.
   2. Floor box service fittings.
   3. Access floor boxes.
   4. Additional requirements for locating boxes for wiring devices.

1.4 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

B. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.

C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.

D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports 2013 (Reaffirmed 2020).

E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

F. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.

H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.

I. UL 508A - Industrial Control Panels Current Edition, Including All Revisions.

J. UL 514A - Metallic Outlet Boxes Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
6. Coordinate the work with other trades to preserve insulation integrity.
7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes, junction and pull boxes, cabinets and enclosures, and floor boxes.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 BOXES

A. General Requirements:

1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
3. Provide products listed, classified, and labeled as suitable for the purpose intended.
4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
5. Provide grounding terminals within boxes where equipment grounding conductors terminate.

B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
3. Use suitable concrete type boxes where flush-mounted in concrete.
4. Use suitable masonry type boxes where flush-mounted in masonry walls.
5. Use raised covers suitable for the type of wall construction and device configuration where required.
6. Use shallow boxes where required by the type of wall construction.
7. Do not use "through-wall" boxes designed for access from both sides of wall.
8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
12. Minimum Box Size, Unless Otherwise Indicated:
    a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
    b. Communications Systems Outlets: 4 inch square by 2-1/8 inch (100 by 54 mm) trade size.
    c. Ceiling Outlets: 4 inch octagonal or square by 1-1/2 inch deep (100 by 38 mm) trade size.
13. Wall Plates: Comply with Section 262726.
14. Manufacturers:
    a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
    b. Hubbell Incorporated; Bell Products: www.hubbell-rtb.com/#sle.
    c. Hubbell Incorporated; RACO Products: www.hubbell-rtb.com/#sle.
    d. O-Z/Gedney, a brand of Emerson Electric Co: www.emerson.com/#sle.
    e. Thomas & Betts Corporation: www.tnb.com/#sle.

C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
    a. Indoor Clean, Dry Locations: Type 1, painted steel.
    b. Outdoor Locations: Type 3R, painted steel.
3. Junction and Pull Boxes Larger Than 100 cubic inches (1,650 cu cm):
    a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
    b. Boxes 6 square feet (0.56 sq m) and Larger: Provide sectionalized screw-cover or hinged-cover enclosures.

D. Boxes and Enclosures for Integrated Power, Data, and Audio/Video: Size and configuration as indicated or as required with partitions to separate services; field-connected gangable boxes may be used.
1. Manufacturers:
    a. Hubbell Incorporated: www.hubbell.com/#sle.

E. Floor Boxes:
1. Description: Floor boxes compatible with floor box service fittings provided in accordance with Section 262726; with partitions to separate multiple services; furnished with all components, adapters, and trims required for complete installation.
2. Use cast iron floor boxes within slab on grade.
3. Use sheet-steel or cast iron floor boxes within slab above grade.
4. Metallic Floor Boxes: Fully adjustable (with integral means for leveling adjustment prior to and after concrete pour).
5. Manufacturer: Same as manufacturer of floor box service fittings.

2.2 ACCESSORIES

A. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for boxes and facade materials to be installed.
1. Manufacturers:
a. Quickflash Weatherproofing Products, Inc: www.quickflashproducts.com/#sle.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive boxes.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide separate boxes for emergency power and normal power systems.

E. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.

F. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.

G. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.

H. Box Locations:
1. Locate boxes to be accessible. Provide access panels in accordance with Section 083100 as required where approved by the Architect.
2. Unless dimensioned, box locations indicated are approximate.
3. Locate boxes as required for devices installed under other sections or by others.
a. Switches, Receptacles, and Other Wiring Devices: Comply with Section 262726.
4. Locate boxes so that wall plates do not span different building finishes.
5. Locate boxes so that wall plates do not cross masonry joints.

6. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
7. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches (150 mm) horizontal separation unless otherwise indicated.
8. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
9. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 260533.13.
10. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
    a. Concealed above accessible suspended ceilings.
    b. Electrical rooms.
    c. Mechanical equipment rooms.

I. Box Supports:
1. Secure and support boxes in accordance with NFPA 70 and Section 260529 using suitable supports and methods approved by the authority having jurisdiction.
2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.

J. Install boxes plumb and level.

K. Flush-Mounted Boxes:
1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch (6 mm) or does not project beyond finished surface.
2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch (3 mm) at the edge of the box.

L. Install boxes as required to preserve insulation integrity.

M. Metallic Floor Boxes: Install box level at the proper elevation to be flush with finished floor.

N. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.

P. Close unused box openings.

Q. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.

R. Provide grounding and bonding in accordance with Section 260526.

S. Identify boxes in accordance with Section 260553.

3.3 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.4 PROTECTION

A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

END OF SECTION 260533.16

SECTION 260533.23 - SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Surface raceway systems.

B. Wireways.

C. Tele-Power Poles.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.
   1. Includes metal channel (strut) used as raceway.

C. Section 260533.13 - Conduit for Electrical Systems.

D. Section 260533.16 - Boxes for Electrical Systems.

E. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

F. Section 262723 - Indoor Service Poles.

G. Section 262726 - Wiring Devices: Receptacles.

1.4 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

D. UL 5 - Surface Metal Raceways and Fittings Current Edition, Including All Revisions.

E. UL 111 - Outline of Investigation for Multioutlet Assemblies Current Edition, Including All Revisions.

F. UL 870 - Wireways, Auxiliary Gutters, and Associated Fittings Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of raceways with millwork, furniture, equipment, etc. installed under other sections or by others.

2. Coordinate rough-in locations of outlet boxes provided under Section 260533.16 and conduit provided under Section 260533.13 as required for installation of raceways provided under this section.
3. Verify minimum sizes of raceways with the actual conductors and components to be installed.
4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
1. Do not install raceways until final surface finishes and painting are complete.
2. Do not begin installation of conductors and cables until installation of raceways is complete between outlet, junction and splicing points.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including dimensions, knockout sizes and locations, materials, fabrication details, finishes, service condition requirements, and accessories.
1. Surface Raceway Systems: Include information on fill capacities for conductors and cables.

C. Shop Drawings:
1. Pre-wired Surface Raceway Systems: Provide plan and elevation views including dimensioned locations of wiring devices and circuiting arrangements.
2. Wireways: Provide dimensioned plan and elevation views including adjacent equipment with all required clearances indicated.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 RACEWAY REQUIREMENTS

A. Provide all components, fittings, supports, and accessories required for a complete raceway system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

2.2 SURFACE RACEWAY SYSTEMS

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell.com/#sle.
2. MonoSystems, Inc: www.monosystems.com/#sle.
3. Wiremold, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Surface Metal Raceways: Listed and labeled as complying with UL 5.

C. Multioutlet Assemblies: Listed and labeled as complying with UL 111.

D. Metal Channel (Strut) Used as Raceway: Comply with Section 260529.

E. Surface Raceway System:
1. Raceway Type: Two channel, painted steel.
2. Length: As indicated on the drawings.
3. Color: To be selected by Architect.
4. Accessory Device Boxes: Suitable for the devices to be installed; color to match raceway.
5. Integrated Device Provisions:
a. Receptacles:
1) Comply with Section 262726, except for finishes.
2) Configuration: As indicated on the drawings.
3) Color: Match raceway.
4) Spacing: As indicated on the drawings.
b. Communications Outlets:
1) Voice and Data Jacks: Include provisions for jacks furnished by others.
2) Configuration: As indicated on the drawings.
3) Spacing: As indicated on the drawings.

2.3 WIREWAYS

A. Manufacturers:
1. Cooper B-Line, a division of Cooper Industries: www.cooperindustries.com/#sle.
2. Enduro Composites: www.endurocomposites.com/#sle.
3. Hoffman, a brand of Pentair Technical Products: www.hoffmanonline.com/#sle.
4. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

B. Description: Lay-in wireways and wiring troughs with removable covers; listed and labeled as complying with UL 870.

C. Wireway Type, Unless Otherwise Indicated:
1. Indoor Clean, Dry Locations: NEMA 250, Type 1, painted steel with screw-cover.

D. Finish for Painted Steel Wireways: Manufacturer's standard grey unless otherwise indicated.

E. Minimum Wireway Size: 4 by 4 inches (100 by 100 mm) unless otherwise indicated.

F. Where wireway size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.4 TELE-POWER POLES

A. Manfucturers:
1. Legrand (Wiremold #NP800 <=Design Make)
2. Hubbell
3. Panduit

B. Description: Two-compartment, large capacity, blank pole. No pre-wired receptacles.

C. Size: Pole shall be sized large enough to route up to twenty (20) CAT 6 cables and three (3) 120V branch circuits.10-feet high.

D. Material: Aluminum.

E. Finish: To be determined by Architect.

F. Provide flange at top of pole where pole passes through drop ACT ceiling; flange finish to match pole.

2.5 SOURCE QUALITY CONTROL

A. Factory test each production unit for pre-wired surface raceway systems to verify proper wiring.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes and conduit terminations are installed in proper locations and are properly sized in accordance with NFPA 70 to accommodate raceways.

C. Verify that mounting surfaces are ready to receive raceways and that final surface finishes are complete, including painting.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install raceways plumb and level.

D. Arrange wireways and associated raceway connections to comply with NFPA 70, including but not limited to requirements for deflected conductors and wireways used as pullboxes. Increase size of wireway where necessary.

E. Secure and support raceways in accordance with Section 260529 at intervals complying with NFPA 70 and manufacturer's requirements.

F. Close unused raceway openings.

G. Provide grounding and bonding in accordance with Section 260526.

H. Identify raceways in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Inspect raceways for damage and defects.

B. Surface Raceway Systems with Integrated Devices: Test each wiring device to verify operation and proper polarity.

C. Correct wiring deficiencies and replace damaged or defective raceways.

3.4 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.5 PROTECTION

A. Protect installed raceways from subsequent construction operations.

END OF SECTION 260533.23

SECTION 260536 - CABLE TRAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Metal cable tray systems:
   1. Metal ladder cable tray.
   2. Metal wire mesh/basket cable tray.

1.3 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

B. Section 260526 - Grounding and Bonding for Electrical Systems.

C. Section 260529 - Hangers and Supports for Electrical Systems.

D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

1.4 REFERENCE STANDARDS

A. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.

B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

C. NEMA VE 1 - Metal Cable Tray Systems 2017.

D. NEMA VE 2 - Cable Tray Installation Guidelines 2018.

E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the arrangement of cable tray with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others. Coordinate the work with other trades to avoid installation of obstructions within cable tray required clearances.
   2. Coordinate arrangement of cable tray with the dimensions and clearance requirements of the actual products to be installed.
   3. Coordinate the work with placement of supports, anchors, etc. required for mounting.
   4. Notify of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Preinstallation Meeting: Convene one week prior to commencing work of this section; require attendance of all affected installers. Review proposed routing, sequence of installation, and protection requirements for installed cable tray.

C. Sequencing:

1. Do not begin installation of cables until installation of associated cable tray run is complete.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for cable tray system components and accessories. Include dimensions, materials, fabrication details, finishes, and span/load ratings.

C. Shop Drawings: Include dimensioned plan views and sections indicating proposed cable tray routing, required clearances, and locations and details of supports, fittings, building element penetrations, and equipment connections.

D. Project Record Documents: Record actual routing of cable tray and locations of supports.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.1 CABLE TRAY SYSTEM - GENERAL REQUIREMENTS

A. Provide new cable tray system consisting of all required components, fittings, supports, accessories, etc. as necessary for a complete system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Do not use cable tray for applications other than as permitted by NFPA 70 and product listing/classification.

D. Provide cable tray system and associated components suitable for use at indicated span/load ratings under the service conditions at the installed location.

E. Unless otherwise indicated, specified span/load ratings are based on safety factor of 1.5 and working load only (no additional concentrated static load), with ratings for metal cable tray systems in accordance with NEMA VE 1.

F. Unless otherwise indicated, specified load/fill depths and inside widths are nominal values, with values for metal cable tray systems in accordance with NEMA VE 1 including applicable allowable tolerances.

2.2 METAL CABLE TRAY SYSTEMS

A. Manufacturers:
1. Metal Cable Tray System:
   a. Cablofil, a brand of Legrand North America, Inc: www.legrand.us/#sle.
   b. Chalfant Manufacturing Company: www.chalfant-obo.com/#sle.
   c. Cope, a brand of Atkore International Inc: www.copecabletray.com/#sle.
   d. Thomas & Betts Corporation: www.tnb.com/#sle.
2. Source Limitations: Furnish cable tray system and associated components and accessories produced by a single manufacturer and obtained from a single supplier.

B. Comply with NEMA VE 1.

C. Finishes:
1. Zinc Electroplated Steel: Comply with ASTM B633.

D. Metal Ladder Cable Tray:
1. Material: Aluminum.
2. Load/Fill Depth: As indicated on drawings.
3. Span/Load Rating: As indicated on drawings.
4. Rung Spacing: 9 inches (229 mm) on center for straight lengths.
5. Inside Width: As indicated on drawings.
6. Inside Radius of Fittings: 12 inches (305 mm).

E. Metal Wire Mesh/Basket Cable Tray:
1. Material: Zinc electroplated steel or mill-galvanized before fabrication (pre-galvanized) steel.
2. Tray Depth: As indicated on drawings.
3. Span/Load Rating: As indicated on drawings.
4. Mesh Spacing: 2 by 4 inches (51 by 102 mm).
5. Tray Width: As indicated on drawings.

2.3 SOURCE QUALITY CONTROL

A. Metal Cable Tray: Perform factory design tests in accordance with NEMA VE 1, including electrical continuity and load testing.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that work likely to damage cable tray system has been completed.

B. Verify that field measurements are as indicated.

C. Verify that the dimensions and span/load ratings of cable tray system components are consistent with the indicated requirements.

D. Verify that mounting surfaces are ready to receive cable tray and associated supports.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install cable tray in accordance with NECA 1 (general workmanship), and NEMA VE 2.

C. Unless otherwise indicated, arrange cable tray to be parallel or perpendicular to building lines.

D. Arrange cable tray to provide required clearances and maintain cable access.
1. Minimum Clearance Above and Adjacent to Cable Tray: 12 inches (300 mm).

E. Install cable tray plumb and level, with sections aligned and with horizontal runs at the proper elevation.

F. Metal Wire Mesh/Basket Cable Tray: Field fabricate fittings in accordance with manufacturer's instructions, using only manufacturer-approved connectors classified for bonding.
1. Inside Radius of Fittings: 12 inches (305 mm).

G. Cable Tray Movement Provisions:
1. Provide suitable expansion fittings where cable tray is subject to movement, including but not limited to:
a. Where cable tray crosses structural joints intended for expansion.
b. Long straight cable tray runs in accordance with NEMA VE 2.
2. Use expansion guides in lieu of hold-down clamps where prescribed in NEMA VE 2.
3. Set gaps for expansion fittings in accordance with NEMA VE 2.

H. Cable Provisions:
1. Use suitable fixed barrier strips to maintain separation of cables as indicated and as required by NFPA 70.
2. Use suitable drop-out fittings or bushings where cables exit cable tray as required to maintain minimum cable bending radius.
3. Use suitable cable support fittings for long vertical cable tray runs with heavy cables.

I. Provide end closures at unconnected ends of cable tray runs.

J. Cable Tray Support:
1. Use manufacturer's recommended hangers and supports, located in accordance with NEMA VE 2 and manufacturer's requirements, but not exceeding specified span unless otherwise approved by Engineer. Provide required support and attachment in accordance with Section 260529, where not furnished by cable tray manufacturer.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

K. Grounding and Bonding Requirements, in Addition to Requirements of Section 260526:
1. Comply with grounding and bonding requirements of NEMA VE 2.
2. Metal Cable Tray Systems: Use suitable bonding jumpers or classified connectors to provide electrical continuity.
3. Metal cable tray system may be used as sole equipment grounding conductor only where all conditional requirements of NFPA 70 are met, including but not limited to:
a. Installation must be in a qualifying facility with suitable maintenance and supervision as determined by authorities having jurisdiction.
b. Cable tray system must be steel or aluminum (as specified) and classified as an equipment grounding conductor (note that stainless steel cable tray is not permitted for use as an equipment grounding conductor).
c. Cable tray must meet minimum cross-sectional area requirements.

L. Penetrations: Install firestopping to preserve fire resistance rating of building elements, using materials and methods specified in Section 078400.

M. Identification Requirements, in Addition to Those Specified in Section 260553.

N. Install cable tray covers where indicated.

3.3 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Inspect cable tray system for damage and defects.

C. Correct deficiencies and replace damaged or defective cable tray system components.

3.4 ADJUSTING

A. Adjust tightness of mechanical connections to manufacturer's recommended torque settings.

3.5 CLEANING

A. Remove dirt and debris from cable tray.

B. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.6 PROTECTION

A. Protect cable tray system from subsequent construction operations.

END OF SECTION 260536

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Electrical identification requirements.

B. Identification nameplates and labels.

C. Wire and cable markers.

D. Voltage markers.

E. Floor marking tape.

F. Warning signs and labels.

1.3 RELATED REQUIREMENTS

A. Section 099113 - Exterior Painting.

B. Section 099123 - Interior Painting.

C. Section 260519 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

D. Section 260536 - Cable Trays for Electrical Systems: Additional identification requirements for cable tray systems.

E. Section 262726 - Wiring Devices - Lutron: Device and wallplate finishes; factory pre-marked wallplates.

1.4 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. NFPA 70E - Standard for Electrical Safety in the Workplace 2021.

C. UL 969 - Marking and Labeling Systems Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.

B. Sequencing:
   1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.

2. Do not install identification products until final surface finishes and painting are complete.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 FIELD CONDITIONS

A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

PART 2 PRODUCTS

2.1 IDENTIFICATION REQUIREMENTS

A. Existing Work: Unless specifically excluded, identify existing elements to remain that are not already identified in accordance with specified requirements.

B. Identification for Equipment:
1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
a. Switchboards:
1) Identify ampere rating.
2) Identify voltage and phase.
3) Identify power source and circuit number. Include location when not within sight of equipment.
4) Use identification nameplate to identify main overcurrent protective device.
5) Use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
b. Panelboards:
1) Identify ampere rating.
2) Identify voltage and phase.
3) Identify power source and circuit number. Include location when not within sight of equipment.
4) Identify main overcurrent protective device. Use identification label for panelboards with a door. For power distribution panelboards without a door, use identification nameplate.
5) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces using pencil.
6) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
c. Transformers:
1) Identify kVA rating.
2) Identify voltage and phase for primary and secondary.
3) Identify power source and circuit number. Include location when not within sight of equipment.
4) Identify load(s) served. Include location when not within sight of equipment.
d. Enclosed switches, circuit breakers, and motor controllers:

1) Identify voltage and phase.
2) Identify power source and circuit number. Include location when not within sight of equipment.
3) Identify load(s) served. Include location when not within sight of equipment.

e. Time Switches:
1) Identify load(s) served and associated circuits controlled. Include location.

f. Enclosed Contactors:
1) Identify ampere rating.
2) Identify voltage and phase.
3) Identify configuration, e.g., E.O.E.H. (electrically operated, electrically held) or E.O.M.H. (electrically operated, mechanically held).
4) Identify coil voltage.
5) Identify load(s) and associated circuits controlled. Include location.

g. Transfer Switches:
1) Identify voltage and phase.
2) Identify power source and circuit number for both normal power source and standby power source. Include location when not within sight of equipment.
3) Identify load(s) served. Include location when not within sight of equipment.
4) Identify short circuit current rating based on the specific overcurrent protective device type and settings protecting the transfer switch.

2. Service Equipment:
a. Use identification nameplate to identify each service disconnecting means.
b. For buildings or structures supplied by more than one service, or any combination of branch circuits, feeders, and services, use identification nameplate or means of identification acceptable to authority having jurisdiction at each service disconnecting means to identify all other services, feeders, and branch circuits supplying that building or structure. Verify format and descriptions with authority having jurisdiction.

3. Emergency System Equipment:
a. Use identification nameplate or voltage marker to identify emergency system equipment in accordance with NFPA 70.
b. Use identification nameplate at each piece of service equipment to identify type and location of on-site emergency power sources.
c. Use identification nameplate to identify emergency operating instructions for emergency system equipment.

4. Use voltage marker to identify highest voltage present for each piece of electrical equipment.

5. Use identification nameplate to identify disconnect location for equipment with remote disconnecting means.

6. Use identification label or handwritten text using indelible marker on inside of door at each fused switch to identify required NEMA fuse class and size.

7. Use identification label or handwritten text using indelible marker on inside of door at each motor controller to identify nameplate horsepower, full load amperes, code letter, service factor, voltage, and phase of motor(s) controlled.

8. Use identification label to identify overcurrent protective devices for branch circuits serving fire alarm circuits. Identify with text "FIRE ALARM CIRCUIT".

9. Use floor marking tape or warning labels to identify required equipment working clearances where indicated or where required by the authority having jurisdiction.

10. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
a. Service equipment.
b. Industrial control panels.
c. Motor control centers.
d. Elevator control panels.
e. Industrial machinery.

11. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
    a. Minimum Size: 3.5 by 5 inches (89 mm by 127 mm).
    b. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
12. Use warning signs to identify electrical hazards for entrances to all rooms and other guarded locations that contain exposed live parts operating at 600 V nominal or less with the word message "DANGER; Electrical hazard; Authorized personnel only" or approved equivalent.
13. Use warning labels, identification nameplates, or identification labels to identify electrical hazards for equipment where multiple power sources are present with the word message "DANGER; Hazardous voltage; Multiple power sources may be present; Disconnect all electric power including remote disconnects before servicing" or approved equivalent.

C. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 260519.
2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
3. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
    a. At each source and load connection.
    b. Within boxes when more than one circuit is present.
    c. Within equipment enclosures when conductors and cables enter or leave the enclosure.
4. Use wire and cable markers to identify connected grounding electrode system components for grounding electrode conductors.

D. Identification for Raceways:
1. Use voltage markers or color-coded bands to identify systems other than normal power system for accessible conduits at maximum intervals of 20 feet (6.1 m).
    a. Color-Coded Bands: Use field-painting or vinyl color coding electrical tape to mark bands 3 inches (76 mm) wide.
        1) Color Code:
            a) Fire Alarm System: Red.
        2) Vinyl Color Coding Electrical Tape: Comply with Section 260519.
2. Use identification labels, handwritten text using indelible marker, or plastic marker tags to identify circuits enclosed for accessible conduits at wall penetrations, at floor penetrations, at roof penetrations, and at equipment terminations when source is not within sight.
3. Use identification labels, handwritten text using indelible marker, or plastic marker tags to identify spare conduits at each end. Identify purpose and termination location.
4. Use voltage markers to identify highest voltage present for wireways at maximum intervals of 20 feet (6.1 m).

E. Identification for Boxes:
1. Use voltage markers to identify highest voltage present.
2. Use voltage markers or color coded boxes to identify systems other than normal power system.
    a. Color-Coded Boxes: Field-painted in accordance with Section 099123 and 099113 per the same color code used for raceways.
        1) Fire Alarm System: Red.
3. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.

a. For exposed boxes in public areas, use only identification labels.

4. Use warning labels to identify electrical hazards for boxes containing exposed live parts or exposed conductors operating at over 600 V nominal with the word message "DANGER; HIGH VOLTAGE; KEEP OUT".

F. Identification for Devices:
1. Wiring Device and Wallplate Finishes: Comply with Section 262726.
2. Use identification label to identify fire alarm system devices.
a. For devices concealed above suspended ceilings, provide additional identification on ceiling tile below device location.
3. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
4. Use identification label or engraved wallplate to identify load controlled for wall-mounted control devices controlling loads that are not visible from the control location and for multiple wall-mounted control devices installed at one location.
5. Use identification label to identify receptacles protected by upstream GFI protection, where permitted.

G. Identification for Luminaires:
1. Use permanent red dot on luminaire frame to identify luminaires connected to emergency power system.

2.2 IDENTIFICATION NAMEPLATES AND LABELS

A. Identification Nameplates:
1. Manufacturers:
a. Brimar Industries, Inc: www.brimar.com/#sle.
b. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
c. Seton Identification Products: www.seton.com/#sle.
2. Materials:
a. Indoor Clean, Dry Locations: Use plastic nameplates.
3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch (1.6 mm); engraved text.
4. Stainless Steel Nameplates: Minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
5. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
6. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch (25 mm) high; Four, located at corners for larger sizes.

B. Identification Labels:
1. Manufacturers:
a. Brady Corporation: www.bradyid.com/#sle.
b. Brother International Corporation: www.brother-usa.com/#sle.
c. Panduit Corp: www.panduit.com/#sle.
2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

C. Format for Equipment Identification:
1. Minimum Size: 1 inch (25 mm) by 2.5 inches (64 mm).
2. Legend:
a. System designation where applicable:
1) Emergency Power System: Identify with text "EMERGENCY".
2) Fire Alarm System: Identify with text "FIRE ALARM".

b. Equipment designation or other approved description.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height:
   a. System Designation: 1 inch (25 mm).
   b. Equipment Designation: 1/2 inch (13 mm).
5. Color:
   a. Normal Power System: White text on black background.
      1) 480Y/277 V, 3 Phase Equipment: White text on Black background.
      2) 208Y/120 V, 3 Phase Equipment: White text on Black background.
   b. Emergency Power System: White text on red background.
   c. Fire Alarm System: White text on red background.

D. Format for General Information and Operating Instructions:
1. Minimum Size: 1 inch (25 mm) by 2.5 inches (64 mm).
2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 1/4 inch (6 mm).
5. Color: Black text on white background unless otherwise indicated.

E. Format for Caution and Warning Messages:
1. Minimum Size: 2 inches (51 mm) by 4 inches (100 mm).
2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 1/2 inch (13 mm).
5. Color: Black text on yellow background unless otherwise indicated.

F. Format for Receptacle Identification:
1. Minimum Size: 3/8 inch (10 mm) by 1.5 inches (38 mm).
2. Legend: Power source and circuit number or other designation indicated.
   a. Include voltage and phase for other than 120 V, single phase circuits.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch (5 mm).
5. Color: Black text on clear background.

G. Format for Control Device Identification:
1. Minimum Size: 3/8 inch (10 mm) by 1.5 inches (38 mm).
2. Legend: Load controlled or other designation indicated.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch (5 mm).
5. Color: Black text on clear background.

H. Format for Fire Alarm Device Identification:
1. Minimum Size: 3/8 inch (10 mm) by 1.5 inches (38 mm).
2. Legend: Designation indicated and device zone or address.
3. Text: All capitalized unless otherwise indicated.
4. Minimum Text Height: 3/16 inch (5 mm).
5. Color: Red text on white background.

2.3 WIRE AND CABLE MARKERS

A. Manufacturers:
1. Brady Corporation: www.bradyid.com/#sle.

2. HellermannTyton: www.hellermanntyton.com/#sle.
3. Panduit Corp: www.panduit.com/#sle.

B. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.

C. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.

D. Legend: Power source and circuit number or other designation indicated.

E. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
1. Do not use handwritten text.

F. Minimum Text Height: 1/8 inch (3 mm).

G. Color: Black text on white background unless otherwise indicated.

2.4 VOLTAGE MARKERS

A. Manufacturers:
1. Brady Corporation: www.bradyid.com/#sle.
2. Brimar Industries, Inc: www.brimar.com/#sle.
3. Seton Identification Products: www.seton.com/#sle.

B. Markers for Conduits: Use factory pre-printed self-adhesive vinyl, self-adhesive vinyl cloth, or vinyl snap-around type markers.

C. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.

D. Minimum Size:
1. Markers for Equipment: 1 1/8 by 4 1/2 inches (29 by 110 mm).
2. Markers for Conduits: As recommended by manufacturer for conduit size to be identified.
3. Markers for Pull Boxes: 1 1/8 by 4 1/2 inches (29 by 110 mm).
4. Markers for Junction Boxes: 1/2 by 2 1/4 inches (13 by 57 mm).

E. Legend:
1. Markers for Voltage Identification: Highest voltage present.
2. Markers for System Identification:
a. Emergency Power System: Text "EMERGENCY".

F. Color: Black text on orange background unless otherwise indicated.

2.5 FLOOR MARKING TAPE

A. Manufacturers:
1. Brady Corporation: www.bradyid.com/#sle.
2. Brimar Industries, Inc: www.brimar.com/#sle.

B. Floor Marking Tape for Equipment Working Clearance Identification: Self-adhesive vinyl or polyester tape with overlaminate, 3 inches (76 mm) wide, with alternating black and white stripes.

2.6 WARNING SIGNS AND LABELS

A. Manufacturers:

1. Brimar Industries, Inc: www.brimar.com/#sle.
2. Clarion Safety Systems, LLC: www.clarionsafety.com/#sle.
3. Seton Identification Products: www.seton.com/#sle.

B. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.

C. Warning Signs:
1. Materials:
a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
3. Minimum Size: 7 by 10 inches (178 by 254 mm) unless otherwise indicated.

D. Warning Labels:
1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
a. Do not use labels designed to be completed using handwritten text.
2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
3. Minimum Size: 2 by 4 inches (51 mm by 102 mm) unless otherwise indicated.

PART 3 EXECUTION

3.1 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
1. Surface-Mounted Equipment: Enclosure front.
2. Flush-Mounted Equipment: Inside of equipment door.
3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
4. Elevated Equipment: Legible from the floor or working platform.
5. Branch Devices: Adjacent to device.
6. Interior Components: Legible from the point of access.
7. Conduits: Legible from the floor.
8. Boxes: Outside face of cover.
9. Conductors and Cables: Legible from the point of access.
10. Devices: Outside face of cover.

C. Install identification products centered, level, and parallel with lines of item being identified.

D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.

E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.

F. Secure rigid signs using stainless steel screws.

G. Mark all handwritten text, where permitted, to be neat and legible.

3.3 FIELD QUALITY CONTROL

A. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION 260553

SECTION 260583 - WIRING CONNECTIONS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Electrical connections to equipment.

1.3 RELATED REQUIREMENTS

A. Section 260519 - Low-Voltage Electrical Power Conductors and Cables.

B. Section 260533.13 - Conduit for Electrical Systems.

C. Section 260533.16 - Boxes for Electrical Systems.

D. Section 262726 - Wiring Devices.

E. Section 262816.16 - Enclosed Switches.

F. Section 262913 - Enclosed Controllers.

1.4 REFERENCE STANDARDS

A. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).

B. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2016.

C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
   2. Determine connection locations and requirements.

B. Sequencing:
   1. Install rough-in of electrical connections before installation of equipment is required.
   2. Make electrical connections before required start-up of equipment.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide wiring device manufacturer’s catalog information showing dimensions, configurations, and construction.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.1 MATERIALS

A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
   1. Colors: Comply with NEMA WD 1.
   2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
   3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

B. Disconnect Switches: As specified in Section 262816.16 and in individual equipment sections.

C. Wiring Devices: As specified in Section 262726.

D. Flexible Conduit: As specified in Section 260533.13.

E. Wire and Cable: As specified in Section 260519.

F. Boxes: As specified in Section 260533.16.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.2 ELECTRICAL CONNECTIONS

A. Make electrical connections in accordance with equipment manufacturer's instructions.

B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

D. Provide receptacle outlet to accommodate connection with attachment plug.

E. Provide cord and cap where field-supplied attachment plug is required.

F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.

H. Install terminal block jumpers to complete equipment wiring requirements.

I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

J. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

END OF SECTION 260583

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Occupancy sensors.

B. Daylighting controls.

1.3 RELATED REQUIREMENTS

A. Section 253626 - Integrated Automation Lighting Relays.

B. Section 260529 - Hangers and Supports for Electrical Systems

C. Section 260533.16 - Boxes for Electrical Systems.

D. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

E. Section 262726 - Wiring Devices: Devices for manual control of lighting, including wall switches, wall dimmers, and fan speed controllers.

F. Section 262813 - Fuses.

G. Section 265100 - Interior Lighting.

1.4 REFERENCE STANDARDS

A. 47 CFR 15 - Radio Frequency Devices current edition.

B. ANSI C136.10 - American National Standard for Roadway and Area Lighting Equipment - Locking-Type Photocontrol Devices and Mating Receptacles - Physical and Electrical Interchangeability and Testing 2017.

C. ANSI C136.24 - American National Standard for Roadway and Area Lighting Equipment - Nonlocking (Button) Type Photocontrols 2020.

D. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

E. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.

F. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

G. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices 2020.

H. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts 2008 (Reaffirmed 2020).

I. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices 2017.

J. NEMA ICS 6 - Industrial Control and Systems: Enclosures 1993 (Reaffirmed 2016).

K. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

L. UL 773 - Plug-in, Locking Type Photocontrols for Use with Area Lighting Current Edition, Including All Revisions.

M. UL 773A - Nonindustrial Photoelectric Switches for Lighting Control Current Edition, Including All Revisions.

N. UL 916 - Energy Management Equipment Current Edition, Including All Revisions.

O. UL 917 - Clock-Operated Switches Current Edition, Including All Revisions.

P. UL 1472 - Solid-State Dimming Controls Current Edition, Including All Revisions.

Q. UL 60947-1 - Low-Voltage Switchgear and Controlgear - Part 1: General Rules Current Edition, Including All Revisions.

R. UL 60947-4-1 - Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-starters - Electromechanical Contactors and Motor-starters Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
4. Coordinate the placement of photo sensors for daylighting controls with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.
5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

B. Sequencing:
1. Do not install lighting control devices until final surface finishes and painting are complete.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
1. Occupancy Sensors: Include detailed motion detection coverage range diagrams.

C. Field Quality Control Reports.

D. Project Record Documents: Record actual installed locations and settings for lighting control devices.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.9 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.10 WARRANTY

A. Provide five year manufacturer warranty for all occupancy sensors.

PART 2 PRODUCTS

2.1 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

C. Products for Switching of Electronic Ballasts/Drivers: Tested and rated to be suitable for peak inrush currents specified in NEMA 410.

2.2 OCCUPANCY SENSORS

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell.com/#sle.
2. Lutron Electronics Company, Inc: www.lutron.com/#sle.
3. Sensor Switch Inc: www.sensorswitch.com/#sle.
4. WattStopper: www.wattstopper.com/#sle.

B. All Occupancy Sensors:
1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
2. Sensor Technology:
   a. Passive Infrared (PIR) Occupancy Sensors: Designed to detect occupancy by sensing movement of thermal energy between zones.
   b. Ultrasonic Occupancy Sensors: Designed to detect occupancy by sensing frequency shifts in emitted and reflected inaudible sound waves.
   c. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
   d. Passive Infrared/Acoustic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and audible sound sensing technologies.
3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.

5. Dual Technology Occupancy Sensors: Field configurable turn-on and hold-on activation with settings for activation by either or both sensing technologies.
6. Passive Infrared Lens Field of View: Field customizable by addition of factory masking material, adjustment of integral blinders, or similar means to block motion detection in selected areas.
7. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
8. Sensitivity: Field adjustable.
9. Adaptive Technology: Field selectable; capable of self-adjusting sensitivity and time delay according to conditions.
10. Integral Photocell: For field selectable and adjustable inhibition of automatic turn-on of load when ambient lighting is above the selected level.
11. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, low-voltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
12. Load Rating for Line Voltage Occupancy Sensors: As required to control the load indicated on drawings.
13. Isolated Relay for Low Voltage Occupancy Sensors: SPDT dry contacts, ratings as required for interface with system indicated.

C. Wall Switch Occupancy Sensors:
1. All Wall Switch Occupancy Sensors:
   a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
   b. Unless otherwise indicated or required to control the load indicated on drawings, provide line voltage units with self-contained relay.
   c. Where indicated, provide two-circuit units for control of two separate lighting loads, with separate manual controls and separately programmable operation for each load.
   d. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).
   e. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
   f. Provide selectable audible alert to notify occupant of impending load turn-off.
   g. Finish: Match finishes specified for wiring devices in Section 262726, unless otherwise indicated.
   h. Provide vandal resistant lenses for passive infrared (PIR) and dual technology wall switch occupancy sensors where indicated.
2. Passive Infrared/Ultrasonic Dual Technology Wall Switch Sensors: Capable of detecting motion within an area of 900 square feet (83.6 sq m).

D. Ceiling Mounted Occupancy Sensors:
1. All Ceiling Mounted Occupancy Sensors:
   a. Description: Low profile occupancy sensors designed for ceiling installation.
   b. Unless otherwise indicated or required to control the load indicated on drawings, provide low voltage units, for use with separate compatible accessory power packs.
   c. Provide field selectable setting for disabling LED motion detector visual indicator.
   d. Occupancy sensor to be field selectable as either manual-on/automatic-off or automatic on/off.
   e. Finish: White unless otherwise indicated.
2. Ultrasonic Ceiling Mounted Occupancy Sensors:
   a. Extended Range Sensors: Capable of detecting motion within an area of 2,000 square feet (185.8 sq m) at a mounting height of 9 feet (2.7 m).
3. Passive Infrared/Ultrasonic Dual Technology Ceiling Mounted Occupancy Sensors:
   a. Extended Range Sensors: Capable of detecting motion within an area of 1,200 square feet (111.5 sq m) at a mounting height of 9 feet (2.7 m), with a field of view of 360 degrees.

4. Passive Infrared/Acoustic Dual Technology Ceiling Mounted Occupancy Sensors:
   a. Extended Range Sensors: Capable of detecting motion within an area of 1,200 square feet (111.5 sq m) at a mounting height of 9 feet (2.7 m).

E. Power Packs for Low Voltage Occupancy Sensors:
1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
3. Input Supply Voltage: Dual rated for 120/277 V ac.
4. Load Rating: As required to control the load indicated on drawings.

2.3 DAYLIGHTING CONTROLS

A. Manufacturers:
1. Hubbell Control Solutions: www.hubbell.com/hubbellcontrolsolutions/en/#sle.Hubbell
2. Lutron Electronics Company, Inc: www.lutron.com/#sle.
3. Sensor Switch Inc: www.sensorswitch.com/#sle.
4. WattStopper: www.wattstopper.com/#sle.

B. System Description: Control system consisting of photo sensors and compatible control modules and power packs, contactors, or relays as required for automatic control of load indicated according to available natural light; capable of integrating with occupancy sensors and manual override controls.

C. Daylighting Control Photo Sensors: Low voltage class 2 photo sensor units with 0-10V output signal proportional to the measured light level and provision for zero or offset based signal.
1. Sensor Type: Filtered silicon photo diode.
2. Sensor Range:
   a. Open Loop Photo Sensors: 3 to 6,000 footcandles (32.3 to 64,580 lx).
3. Finish: White unless otherwise indicated.

D. Power Packs for Low Voltage Daylighting Control Modules:
1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage daylighting control modules for switching of line voltage loads. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
2. Input Supply Voltage: Dual rated for 120/277 V ac.
3. Load Ratings: As required to control the load indicated on drawings.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.

D. Verify that final surface finishes are complete, including painting.

E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.

F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.

G. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Install lighting control relays furnished under Section 253626

C. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of lighting control devices provided under this section.
   1. Mounting Heights: Unless otherwise indicated, as follows:
      a. Wall Switch Occupancy Sensors: 48 inches (1.2 m) above finished floor.
   2. Orient outlet boxes for vertical installation of lighting control devices unless otherwise indicated.
   3. Locate wall switch occupancy sensors on strike side of door with edge of wall plate 3 inches (80 mm) from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.

D. Install lighting control devices in accordance with manufacturer's instructions.

E. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

F. Install lighting control devices plumb and level, and held securely in place.

G. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 262726.

H. Provide required supports in accordance with Section 260529.

I. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

J. Identify lighting control devices in accordance with Section 260553.

K. Occupancy Sensor Locations:
   1. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.
   2. Locate ultrasonic and dual technology passive infrared/ultrasonic occupancy sensors a minimum of 4 feet (1.2 m) from air supply ducts or other sources of heavy air flow and as per manufacturer's recommendations, in order to minimize false triggers.

L. Daylighting Control Photo Sensor Locations:

1. Unless otherwise indicated, locate photo sensors for open loop systems to accurately measure the level of daylight coming into the space, while minimizing the measured amount of lighting from artificial sources.

M. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.

N. Where indicated, install separate compatible wall switches for manual control interface with lighting control devices or associated power packs.

O. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.

P. Where indicated or required, provide cabinet or enclosure in accordance with Section 260533.16 for mounting of lighting control device system components.

3.4 FIELD QUALITY CONTROL

A. Inspect each lighting control device for damage and defects.

B. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.

C. Test daylighting controls to verify proper operation, including light level measurements and time delays where applicable. Record test results in written report to be included with submittals.

D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.5 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.

C. Where indicated or as directed by Architect, install factory masking material or adjust integral blinders on passive infrared (PIR) and dual technology occupancy sensor lenses to block undesired motion detection.

D. Adjust daylighting controls under optimum lighting conditions after all room finishes, furniture, and window treatments have been installed to achieve desired operation as indicated or as directed by Architect. Record settings in written report to be included with submittals. Readjust controls calibrated prior to installation of final room finishes, furniture, and window treatments that do not function properly as determined by Architect.

3.6 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

B. Training: Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of two hours of training.
   3. Instructor: Qualified contractor familiar with the project and with sufficient knowledge of the installed lighting control devices.
   4. Location: At project site.

END OF SECTION 260923

SECTION 262416 - PANELBOARDS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Power distribution panelboards.

B. Lighting and appliance panelboards.

C. Overcurrent protective devices for panelboards.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

1.4 REFERENCE STANDARDS

A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service 2013e (Amended 2017).

B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

C. NECA 407 - Standard for Installing and Maintaining Panelboards 2015.

D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

E. NEMA PB 1 - Panelboards 2011.

F. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less 2013.

G. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.

H. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.

J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.

K. UL 67 - Panelboards Current Edition, Including All Revisions.

L. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures Current Edition, Including All Revisions.

M. UL 943 - Ground-Fault Circuit-Interrupters Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted panelboards where indicated.
4. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for panelboards, enclosures, overcurrent protective devices, and other installed components and accessories.

C. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
1. Include dimensioned plan and elevation views of panelboards and adjacent equipment with all required clearances indicated.
2. Include wiring diagrams showing all factory and field connections.
3. Clearly indicate whether proposed short circuit current ratings are fully rated or, where acceptable, series rated systems.

D. Project Record Documents: Record actual installed locations of panelboards and actual installed circuiting arrangements.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. Panelboard Keys: Two of each different key.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store panelboards in accordance with manufacturer's instructions and NECA 407.

B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

C. Handle carefully in accordance with manufacturer's written instructions to avoid damage to panelboard internal components, enclosure, and finish.

1.9 FIELD CONDITIONS

A. Maintain ambient temperature within the following limits during and after installation of panelboards:
1. Panelboards Containing Circuit Breakers: Between 23 degrees F (-5 degrees C) and 104 degrees F (40 degrees C).

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Eaton Corporation: www.eaton.com/#sle.

B. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

C. Siemens Industry, Inc: www.usa.siemens.com/#sle.

D. Source Limitations: Furnish panelboards and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 PANELBOARDS - GENERAL REQUIREMENTS

A. Provide products listed, classified, and labeled as suitable for the purpose intended.

B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
1. Altitude: Less than 6,600 feet (2,000 m).
2. Ambient Temperature:
a. Panelboards Containing Circuit Breakers: Between 23 degrees F (-5 degrees C) and 104 degrees F (40 degrees C).

C. Short Circuit Current Rating:
1. Provide panelboards with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.

D. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.

E. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.

F. Bussing: Sized in accordance with UL 67 temperature rise requirements.
1. Provide fully rated neutral bus unless otherwise indicated, with a suitable lug for each feeder or branch circuit requiring a neutral connection.
2. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
3. Provide separate isolated/insulated ground bus where indicated or where isolated grounding conductors are provided.

G. Conductor Terminations: Suitable for use with the conductors to be installed.

H. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
a. Indoor Clean, Dry Locations: Type 1.

2. Boxes: Galvanized steel unless otherwise indicated.
   a. Provide wiring gutters sized to accommodate the conductors to be installed.
   b. Increase gutter space as required where sub-feed lugs, feed-through lugs, gutter taps, or oversized lugs are provided.
3. Fronts:
   a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
   b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
4. Lockable Doors: All locks keyed alike unless otherwise indicated.

I. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

J. Provide the following features and accessories where indicated or where required to complete installation:
1. Feed-through lugs.
2. Sub-feed lugs.

2.3 POWER DISTRIBUTION PANELBOARDS

A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.

B. Conductor Terminations:
1. Main and Neutral Lug Material: Copper, suitable for terminating copper conductors only.
2. Main and Neutral Lug Type: Mechanical.

C. Bussing:
1. Phase and Neutral Bus Material: Copper.
2. Ground Bus Material: Copper.

D. Circuit Breakers:
1. Provide bolt-on type.
2. Provide thermal magnetic circuit breakers unless otherwise indicated.
3. Provide electronic trip circuit breakers where indicated.

E. Enclosures:
1. Provide surface-mounted enclosures unless otherwise indicated.
2. Fronts: Provide trims to cover access to load terminals, wiring gutters, and other live parts, with exposed access to overcurrent protective device handles.
3. Provide clear plastic circuit directory holder.

2.4 LIGHTING AND APPLIANCE PANELBOARDS

A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.

B. Conductor Terminations:
1. Main and Neutral Lug Material: Copper, suitable for terminating copper conductors only.
2. Main and Neutral Lug Type: Mechanical.

C. Bussing:
1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
2. Phase and Neutral Bus Material: Copper.

3. Ground Bus Material: Copper.

D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.

E. Enclosures:
1. Provide surface-mounted or flush-mounted enclosures as indicated.
2. Fronts: Provide door-in-door trim with hinged cover for access to load terminals and wiring gutters, and separate lockable hinged door with concealed hinges for access to overcurrent protective device handles without exposing live parts.
3. Provide clear plastic circuit directory holder mounted on inside of door.

2.5 OVERCURRENT PROTECTIVE DEVICES

A. Molded Case Circuit Breakers:
1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
2. Interrupting Capacity:
   a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
      1) 22,000 rms symmetrical amperes at 240 VAC or 208 VAC.
      2) 65,000 rms symmetrical amperes at 480 VAC.
   b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
3. Conductor Terminations:
   a. Provide mechanical lugs unless otherwise indicated.
   b. Lug Material: Copper, suitable for terminating copper conductors only.
4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
   a. Provide field-adjustable magnetic instantaneous trip setting for circuit breaker frame sizes 225 amperes and larger.
5. Electronic Trip Circuit Breakers: Furnish solid state, microprocessor-based, true rms sensing trip units. Refer to one-line diagram for required field-adjustable trip response settings (long time, short time, instantaneous, ground fault etc.).
6. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.
7. Provide the following circuit breaker types where indicated:
   a. Ground Fault Circuit Interrupter (GFCI) Circuit Breakers: Listed as complying with UL 943, class A for protection of personnel.
   b. Ground Fault Equipment Protection Circuit Breakers: Designed to trip at 30 mA for protection of equipment.
   c. 100 Percent Rated Circuit Breakers: Listed for application within the panelboard where installed at 100 percent of the continuous current rating.
8. Provide listed switching duty rated circuit breakers with SWD marking for all branch circuits serving fluorescent lighting.
9. Provide listed high intensity discharge lighting rated circuit breakers with HID marking for all branch circuits serving HID lighting.
10. Do not use tandem circuit breakers.
11. Do not use handle ties in lieu of multi-pole circuit breakers.
12. Provide multi-pole circuit breakers for multi-wire branch circuits as required by NFPA 70.
13. Provide the following features and accessories where indicated or where required to complete installation:
   a. Shunt Trip: Provide 120 VAC coil.
   b. Handle Pad-Lock Provision: For locking circuit breaker handle in OFF position.

2.6 SOURCE QUALITY CONTROL

A. Factory test panelboards according to NEMA PB 1.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings and configurations of the panelboards and associated components are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive panelboards.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship).

B. Install products in accordance with manufacturer's instructions.

C. Install panelboards in accordance with NECA 407 and NEMA PB 1.1.

D. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

E. Provide required support and attachment in accordance with Section 260529.

F. Install panelboards plumb.

G. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.

H. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches (2000 mm) above the floor or working platform.

I. Provide minimum of four (4) spare 1 inch (27 mm) trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.

J. Provide grounding and bonding in accordance with Section 260526.
   1. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on isolated/insulated ground bus.
   2. Terminate branch circuit isolated grounding conductors on isolated/insulated ground bus only. Do not terminate on solidly bonded equipment ground bus.

K. Install all field-installed branch devices, components, and accessories.

L. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.

M. Provide filler plates to cover unused spaces in panelboards.

N. Provide circuit breaker lock-on devices to prevent unauthorized personnel from de-energizing essential loads where indicated. Also provide for the following:

1. Emergency and night lighting circuits.
2. Fire detection and alarm circuits.
3. Communications equipment circuits.
4. Intrusion detection and access control system circuits.
5. Video surveillance system circuits.

O. Identify panelboards in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Molded Case Circuit Breakers: Perform inspections and tests listed in NETA ATS, Section 7.6.1.1 for all main circuit breakers and circuit breakers larger than 250 amperes. Tests listed as optional are not required.

C. Test GFCI circuit breakers to verify proper operation.

D. Test AFCI circuit breakers to verify proper operation.

E. Test shunt trips to verify proper operation.

F. Correct deficiencies and replace damaged or defective panelboards or associated components.

3.4 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

B. Adjust alignment of panelboard fronts.

3.5 CLEANING

A. Clean dirt and debris from panelboard enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION 262416

SECTION 262726 - WIRING DEVICES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Wall switches.

B. Receptacles.

C. Wall plates.

1.3 RELATED REQUIREMENTS

A. Section 260519 - Low-Voltage Electrical Power Conductors and Cables: Manufactured wiring systems for use with access floor boxes with compatible pre-wired connectors.

B. Section 260526 - Grounding and Bonding for Electrical Systems.

C. Section 260533.16 - Boxes for Electrical Systems.

D. Section 260533.23 - Surface Raceways for Electrical Systems: Surface raceway systems, including multioutlet assemblies.

E. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

F. Section 260583 - Wiring Connections: Cords and plugs for equipment.

G. Section 260923 - Lighting Control Devices: Devices for automatic control of lighting, including occupancy sensors, in-wall time switches, and in-wall interval timers.

H. Section 262723 - Indoor Service Poles.

I. Section 262913 - Enclosed Controllers: Manual motor starters and horsepower rated motor-starting switches without overload protection.

1.4 REFERENCE STANDARDS

A. FS W-C-596 - Connector, Electrical, Power, General Specification for 2017h.

B. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification) 2017g.

C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

D. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2016.

E. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2020).

F. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2016.

G. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

H. UL 20 - General-Use Snap Switches Current Edition, Including All Revisions.

I. UL 498 - Attachment Plugs and Receptacles Current Edition, Including All Revisions.

J. UL 514D - Cover Plates for Flush-Mounted Wiring Devices Current Edition, Including All Revisions.

K. UL 943 - Ground-Fault Circuit-Interrupters Current Edition, Including All Revisions.

L. UL 1310 - Class 2 Power Units Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
5. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

B. Sequencing:
1. Do not install wiring devices until final surface finishes and painting are complete.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.

C. Operation and Maintenance Data:
1. GFCI Receptacles: Include information on status indicators.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.8 DELIVERY, STORAGE, AND PROTECTION

A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.1 WIRING DEVICE APPLICATIONS

A. Provide wiring devices suitable for intended use and with ratings adequate for load served.

B. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.

C. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.

D. Provide GFCI protection for receptacles installed within 6 feet (1.8 m) of sinks.

E. Provide GFCI protection for receptacles serving electric drinking fountains.

F. Unless noted otherwise, do not use combination switch/receptacle devices.

2.2 WIRING DEVICE FINISHES

A. Provide wiring device finishes as described below unless otherwise indicated.

B. Wiring Devices Installed in Finished Spaces: White with stainless steel wall plate.

C. Wiring Devices Installed in Unfinished Spaces: Gray with galvanized steel wall plate.

D. Wiring Devices Installed in Wet or Damp Locations: White with specified weatherproof cover.

E. Wiring Devices Connected to Emergency Power: Red with red nylon wall plate.

2.3 WALL SWITCHES

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell.com/#sle.
2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
3. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable, FS W-S-896; types as indicated on the drawings.
1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.

C. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.4 RECEPTACLES

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell.com/#sle.
2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
3. Lutron Electronics Company, Inc; Designer Style: www.lutron.com/#sle.
4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the

drawings.

1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
2. NEMA configurations specified are according to NEMA WD 6.

C. Convenience Receptacles:
1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
2. Weather Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations; single or duplex as indicated on the drawings.

D. GFCI Receptacles:
1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
   a. Provide test and reset buttons of same color as device.
2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
3. Weather Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.

2.5 WALL PLATES

A. Manufacturers:
1. Hubbell Incorporated: www.hubbell-wiring.com/#sle.
2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
3. Lutron Electronics Company, Inc: www.lutron.com/#sle.
4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.

B. Wall Plates: Comply with UL 514D.
1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
2. Size: Standard; [_____].
3. Screws: Metal with slotted heads finished to match wall plate finish.

C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.

E. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.

F. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.

C. Verify that wall openings are neatly cut and will be completely covered by wall plates.

D. Verify that final surface finishes are complete, including painting.

E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

F. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.

B. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of wiring devices provided under this section.
   1. Mounting Heights: Unless otherwise indicated, as follows:
      a. Wall Switches: 48 inches (1200 mm) above finished floor.
      b. Receptacles: 18 inches (450 mm) above finished floor or 6 inches (150 mm) above counter.
   2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
   3. Locate wall switches on strike side of door with edge of wall plate 3 inches (80 mm) from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
   4. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.

C. Install wiring devices in accordance with manufacturer's instructions.

D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.

E. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.

F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.

G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

H. For isolated ground receptacles, connect wiring device grounding terminal only to identified branch circuit isolated equipment grounding conductor. Do not connect grounding terminal to outlet box or normal branch circuit equipment grounding conductor.

I. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.

J. Install wiring devices plumb and level with mounting yoke held rigidly in place.

K. Install wall switches with OFF position down.

L. Do not share neutral conductor on branch circuits utilizing wall dimmers.

M. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.

N. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.

O. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

P. Identify wiring devices in accordance with Section 260553.

3.4 FIELD QUALITY CONTROL

A. Inspect each wiring device for damage and defects.

B. Operate each wall switch, wall dimmer, and fan speed controller with circuit energized to verify proper operation.

C. Test each receptacle to verify operation and proper polarity.

D. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.

E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.5 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.6 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION 262726

SECTION 262816.16 - ENCLOSED SWITCHES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Enclosed safety switches.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

D. Section 262813 - Fuses.

1.4 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

C. NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum) 2013.

D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.

E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations Current Edition, Including All Revisions.

G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations Current Edition, Including All Revisions.

H. UL 98 - Enclosed and Dead-Front Switches Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within working clearances for electrical equipment required by NFPA 70.
   2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
   3. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.

4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for enclosed switches and other installed components and accessories.

C. Shop Drawings: Indicate outline and support point dimensions, voltage and current ratings, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.
1. Include dimensioned plan and elevation views of enclosed switches and adjacent equipment with all required clearances indicated.
2. Include wiring diagrams showing all factory and field connections.
3. Identify mounting conditions required for equipment seismic qualification.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

1.9 FIELD CONDITIONS

A. Maintain ambient temperature between -22 degrees F (-30 degrees C) and 104 degrees F (40 degrees C) during and after installation of enclosed switches.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Eaton Corporation: www.eaton.com/#sle.

B. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

C. Siemens Industry, Inc: www.usa.siemens.com/#sle.

D. Source Limitations: Furnish enclosed switches and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 ENCLOSED SAFETY SWITCHES

A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated on the drawings.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
   1. Altitude: Less than 6,600 feet (2,000 m).
   2. Ambient Temperature: Between -22 degrees F (-30 degrees C) and 104 degrees F (40 degrees C).

D. Horsepower Rating: Suitable for connected load.

E. Voltage Rating: Suitable for circuit voltage.

F. Short Circuit Current Rating:
   1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
   2. Minimum Ratings:
      a. Heavy Duty Single Throw Switches Protected by Class R, Class J, Class L, or Class T Fuses: 200,000 rms symmetrical amperes.

G. Provide with switch blade contact position that is visible when the cover is open.

H. Fuse Clips for Fusible Switches: As required to accept fuses indicated.
   1. Where NEMA Class R fuses are installed, provide rejection feature to prevent installation of fuses other than Class R.

I. Conductor Terminations: Suitable for use with the conductors to be installed.

J. Provide insulated, groundable fully rated solid neutral assembly where a neutral connection is required, with a suitable lug for terminating each neutral conductor.

K. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.

L. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
   1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Indoor Clean, Dry Locations: Type 1.
      b. Outdoor Locations: Type 4X, stainless steel.
   2. Finish for Painted Steel Enclosures: Manufacturer's standard, factory applied grey unless otherwise indicated.

M. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.

N. Heavy Duty Switches:
   1. Comply with NEMA KS 1.
   2. Conductor Terminations:
      a. Provide mechanical lugs unless otherwise indicated.
      b. Provide compression lugs where indicated.
      c. Lug Material: Copper, suitable for terminating copper conductors only.
   3. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.
      a. Provide means for locking handle in the ON position where indicated.

O. Provide the following features and accessories where indicated or where required to complete installation:
   1. Hubs: As required for environment type; sized to accept conduits to be installed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive enclosed safety switches.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide required support and attachment in accordance with Section 260529.

E. Install enclosed switches plumb.

F. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches (2000 mm) above the floor or working platform.

G. Provide grounding and bonding in accordance with Section 260526.

H. Provide fuses complying with Section 262813 for fusible switches as indicated or as required by equipment manufacturer's recommendations.

I. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.

J. Identify enclosed switches in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.5.1.1.

C. Correct deficiencies and replace damaged or defective enclosed safety switches or associated components.

3.4 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.5 CLEANING

A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION 262816.16

SECTION 262913 - ENCLOSED CONTROLLERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Enclosed NEMA controllers for low-voltage (600 V and less) applications:
   1. Manual motor starters.
   2. Motor-starting switches without overload protection.

B. Overcurrent protective devices for motor controllers, including overload relays.

1.3 RELATED REQUIREMENTS

A. Section 260526 - Grounding and Bonding for Electrical Systems.

B. Section 260529 - Hangers and Supports for Electrical Systems.

1.4 REFERENCE STANDARDS

A. IEEE C57.13 - IEEE Standard Requirements for Instrument Transformers 2016.

B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

C. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts 2008 (Reaffirmed 2020).

D. NEMA ICS 6 - Industrial Control and Systems: Enclosures 1993 (Reaffirmed 2016).

E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 60947-1 - Low-Voltage Switchgear and Controlgear - Part 1: General Rules Current Edition, Including All Revisions.

G. UL 60947-4-1 - Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-starters - Electromechanical Contactors and Motor-starters Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances required by NFPA 70.
   2. Coordinate the work to provide motor controllers and associated overload relays suitable for use with the actual motors to be installed.
   3. Coordinate the work to provide controllers and associated wiring suitable for interface with control devices to be installed.

4. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
5. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
6. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for motor controllers, enclosures, overcurrent protective devices, and other installed components and accessories.

C. Shop Drawings: Indicate dimensions, voltage, controller sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.

D. Project Record Documents: Record actual installed locations of controllers and final equipment settings.

E. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.

1.7 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to internal components, enclosure, and finish.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. ABB/GE: www.geindustrial.com/#sle.

B. Eaton Corporation: www.eaton.com/#sle.

C. Rockwell Automation, Inc; Allen-Bradley Products: ab.rockwellautomation.com/#sle.

D. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

E. Siemens Industry, Inc: www.usa.siemens.com/#sle.

2.2 ENCLOSED CONTROLLERS

A. Provide enclosed controller assemblies consisting of all required components, control power transformers, instrumentation and control wiring, accessories, etc. as necessary for a complete operating system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Description: Enclosed controllers complying with NEMA ICS 2, and listed and labeled as complying with UL 60947-1 and UL 60947-4-1; ratings, configurations and features as indicated on the drawings.

D. Service Conditions:
1. Provide controllers and associated components suitable for operation under the following service conditions without derating:
a. Altitude:
1) Class 1 Km Equipment (devices utilizing power semiconductors, e.g. variable frequency controllers): Less than 3,300 feet (1,000 m).
2) Class 2 Km Equipment (electromagnetic and manual devices): Less than 6,600 feet (2,000 m).
b. Ambient Temperature: Between 32 degrees F (0 degrees C) and 104 degrees F (40 degrees C).
2. Provide controllers and associated components suitable for operation at indicated ratings under the service conditions at the installed location.

E. Short Circuit Current Rating:
1. Provide controllers with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.

F. Conductor Terminations: Suitable for use with the conductors to be installed.

G. Enclosures:
1. Comply with NEMA ICS 6.
2. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
3. Finish: Manufacturer's standard unless otherwise indicated.

H. Instrument Transformers:
1. Comply with IEEE C57.13.
2. Select suitable ratio, burden, and accuracy as required for connected devices.
3. Current Transformers: Connect secondaries to shorting terminal blocks.
4. Potential Transformers: Include primary and secondary fuses with disconnecting means.

I. Manual Motor Starters:
1. Description: NEMA ICS 2, Class A manually-operated motor controllers with overload relay(s).
2. Configuration: Non-reversing unless otherwise indicated.
3. Fractional-Horsepower Manual Motor Starters:
a. Furnish with toggle operator.
b. Overload Relays: Bimetallic or melting alloy thermal type.
c. Provide means for locking operator in the OFF position.
4. Integral-Horsepower Manual Motor Starters:
a. Furnish with toggle or pushbutton operator.
b. Overload Relays: Bimetallic or melting alloy thermal type.
c. Provide means for locking operator in the OFF position.
d. Provide auxiliary contact where indicated; normally open (NO) or normally closed (NC) as indicated or as required.

J. Motor-Starting Switches: Horsepower-rated switches without overload protection; toggle operator and means for locking operator in the OFF position.

2.3 OVERCURRENT PROTECTIVE DEVICES

A. Overload Relays:

1. Provide overload relays and, where applicable, associated current elements/heaters, selected according to actual installed motor nameplate data, in accordance with manufacturer's recommendations and NFPA 70; include consideration for motor service factor and ambient temperature correction, where applicable.
2. Inverse-Time Trip Class Rating: Class 20 unless otherwise indicated or required.
3. Trip-free operation.
4. Visible trip indication.
5. Resettable.
   a. Employ manual reset unless otherwise indicated.
   b. Do not employ automatic reset with two-wire control.
6. Bimetallic Thermal Overload Relays:
   a. Interchangeable current elements/heaters.
   b. Adjustable trip; plus/minus 10 percent of nominal, minimum.
   c. Trip test function.
7. Melting Alloy Thermal Overload Relays:
   a. Interchangeable current elements/heaters.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that ratings of enclosed controllers are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive enclosed controllers.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install controllers in accordance with NECA 1 (general workmanship).

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Provide required support and attachment in accordance with Section 260529.

E. Install enclosed controllers plumb and level.

F. Provide grounding and bonding in accordance with Section 260526.

G. Install all field-installed devices, components, and accessories.

H. Where accessories are not self-powered, provide control power source as indicated or as required to complete installation.

I. Set field-adjustable controllers and associated components according to installed motor requirements, in accordance with manufacturer's recommendations and NFPA 70.

3.3 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.4 CLEANING

A. Clean dirt and debris from controller enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

3.5 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of controllers to Owner, and correct deficiencies or make adjustments as directed.

3.6 PROTECTION

A. Protect installed enclosed controllers from subsequent construction operations.

END OF SECTION 262913

SECTION 265100 - INTERIOR LIGHTING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Interior luminaires.

B. Emergency lighting units.

C. Exit signs.

D. Ballasts and drivers.

E. Accessories.

1.3 RELATED REQUIREMENTS

A. Section 260529 - Hangers and Supports for Electrical Systems.

B. Section 260533.16 - Boxes for Electrical Systems.

C. Section 260553 - Identification for Electrical Systems: Identification products and requirements.

D. Section 260923 - Lighting Control Devices.
   1. Includes automatic controls for lighting including occupancy sensors and daylighting controls.
   2. Includes lighting contactors.

E. Section 262726 - Wiring Devices: Manual wall switches and wall dimmers.

1.4 REFERENCE STANDARDS

A. IES LM-63 - IESNA Standard File Format for Electronic Transfer of Photometric Data and Related Information 2002 (Reaffirmed 2008).

B. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products 2008.

C. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules 2015, with Errata (2017).

D. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.

E. NECA/IESNA 500 - Standard for Installing Indoor Lighting Systems 2006.

F. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems 2006.

G. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility 2012.

H. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

I. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

J. UL 924 - Emergency Lighting and Power Equipment Current Edition, Including All Revisions.

K. UL 1598 - Luminaires Current Edition, Including All Revisions.

L. UL 1598C - Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits Current Edition, Including All Revisions.

M. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Shop Drawings:
1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
1. LED Luminaires:
a. Include estimated useful life, calculated based on IES LM-80 test data.
b. Include IES LM-79 test report upon request.
2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IES LM-63 standard format upon request.

D. Field quality control reports.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.7 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
   1. Luminaires.
   2. Suspended ceiling components.
   3. Partitions and millwork that penetrate the ceiling or extend to within 12-inches of the plane of the luminaires.
   4. Structural members to which equipment and/or luminaires will be attached.
   5. Initial access modules for acoustical tile, including size and locations.
   6. Items penetrating finished ceiling, including the following:
      a. Other luminaires.
      b. Air outlets and inlets
      c. Speakers
      d. Sprinklers
      e. Access panels
      f. Ceiling-mounted devices and equipment.

1.8 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

1.9 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.

1.10 DELIVERY, STORAGE, AND PROTECTION

A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.

B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.11 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.12 WARRANTY

A. Provide three year manufacturer warranty for LED luminaires, including drivers.

PART 2 PRODUCTS

2.1 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

2.2 LUMINAIRES

A. Provide products that comply with requirements of NFPA 70.

B. Provide products that are listed and labeled as complying with UL 1598, where applicable.

C. Provide products listed, classified, and labeled as suitable for the purpose intended.

D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.

E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.

F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

G. Recessed Luminaires:
1. Ceiling Compatibility: Comply with NEMA LE 4.
2. Luminaires Recessed in Insulated Ceilings: Listed and labeled as IC-rated, suitable for direct contact with insulation and combustible materials.
3. Luminaires Recessed in Sloped Ceilings: Provide suitable sloped ceiling adapters.

H. LED Luminaires:
1. Components: UL 8750 recognized or listed as applicable.
2. Tested in accordance with IES LM-79 and IES LM-80.
3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

I. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

2.3 EMERGENCY LIGHTING UNITS

A. Description: Emergency lighting units complying with NFPA 101 and all applicable state and local codes, and listed and labeled as complying with UL 924.

B. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.

C. Battery:
1. Sealed maintenance-free nickel cadmium unless otherwise indicated.
2. Size battery to supply all connected lamps, including emergency remote heads where indicated.

D. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.

E. Provide low-voltage disconnect to prevent battery damage from deep discharge.

F. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

G. Accessories:
1. Provide compatible accessory mounting brackets where indicated or required to complete installation.

2. Where indicated, provide emergency remote heads that are compatible with the emergency lighting unit they are connected to and suitable for the installed location.

2.4 EXIT SIGNS

A. Description: Exit signs complying with NFPA 101 and applicable state and local codes, and listed and labeled as complying with UL 924.
   1. Number of Faces: Single- or double-face as indicated or as required for installed location.
   2. Directional Arrows: As indicated or as required for installed location.

B. Powered Exit Signs: Internally illuminated with LEDs unless otherwise indicated.
   1. Self-Powered Exit Signs:
      a. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
      b. Battery: Sealed, maintenance-free, nickel cadmium unless otherwise indicated.
      c. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
      d. Provide low-voltage disconnect to prevent battery damage from deep discharge.
      e. Self-Diagnostics: Provide units that self-monitor functionality and automatically perform testing required by NFPA 101 where indicated; provide indicator light(s) to report test and diagnostic status.

2.5 DRIVERS

A. Dimmable LED Drivers:
   1. Dimming Range: Continuous dimming from 100 percent to percent indicated in Lighting Fixture Schedule relative light output unless dimming capability to lower level is indicated, without flicker.
   2. Control Compatibility: Fully compatible with the dimming controls to be installed.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.

C. Verify that suitable support frames are installed where required.

D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.

E. Verify that conditions are satisfactory for installation prior to starting work.

3.2 PREPARATION

A. Provide extension rings to bring outlet boxes flush with finished surface.

B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.3 INSTALLATION

A. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of luminaires provided under this section.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install products in accordance with manufacturer's instructions.

D. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).

E. Provide required support and attachment in accordance with Section 260529.

F. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

G. Suspended Ceiling Mounted Luminaires:
1. Do not use ceiling tiles to bear weight of luminaires.
2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
3. Secure surface-mounted and recessed luminaires to ceiling support channels or framing members or to building structure.
4. Secure pendant-mounted luminaires to building structure.
5. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gage, connected from opposing corners of each recessed luminaire to building structure.
6. See appropriate Division 9 section where suspended grid ceiling is specified for additional requirements.

H. Recessed Luminaires:
1. Install trims tight to mounting surface with no visible light leakage.
2. Non-IC Rated Luminaires: Maintain required separation from insulation and combustible materials according to listing.
3. Luminaires Recessed in Fire-Rated Ceilings: Install using accessories and firestopping materials to meet regulatory requirements for fire rating.

I. Suspended Luminaires:
1. Unless otherwise indicated, specified mounting heights are to bottom of luminaire.
2. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
3. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet (1.2 m) between supports.
4. Install canopies tight to mounting surface.
5. Unless otherwise indicated, support pendants from swivel hangers.

J. Wall-Mounted Luminaires: Unless otherwise indicated, specified mounting heights are to center of luminaire.

K. Install accessories furnished with each luminaire.

L. Bond products and metal accessories to branch circuit equipment grounding conductor.

M. Emergency Lighting Units:
1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

N. Exit Signs:
1. Unless otherwise indicated, connect unit to unswitched power from same circuit feeding normal lighting in same room or area. Bypass local switches, contactors, or other lighting controls.

O. Identify luminaires connected to emergency power system in accordance with Section 260553.

P. Install lamps in each luminaire.

Q. LED Burn-In: Operate LEDs at full output for prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace LEDs that fail prematurely due to improper burn-in.

3.4 FIELD QUALITY CONTROL

A. Inspect each product for damage and defects.

B. Operate each luminaire after installation and connection to verify proper operation.

C. Test self-powered exit signs, emergency lighting units, and fluorescent emergency power supply units to verify proper operation upon loss of normal power supply.

D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.5 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

B. Aim and position adjustable emergency lighting unit lamps to achieve optimum illumination of egress path as required or as directed by Architect or authority having jurisdiction.

C. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

3.6 CLEANING

A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

3.7 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.

B. Just prior to Substantial Completion, replace all lamps that have failed.

3.8 PROTECTION

A. Protect installed luminaires from subsequent construction operations.

END OF SECTION 265100

MONTGOMERY COUNTY NY

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DIVISION 27

Communications

SECTION 271000 - STRUCTURED CABLING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Communications system design requirements.

B. Communications pathways.

C. Copper cable and terminations.

D. Communications outlets.

E. Communications grounding and bonding.

F. Communications identification.

1.3 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

B. Section 260519.13 - Undercarpet Electrical Power Cables: Flat cable and fittings for undercarpet communications distribution.

C. Section 260526 - Grounding and Bonding for Electrical Systems.

D. Section 260533.13 - Conduit for Electrical Systems.

E. Section 260536 - Cable Trays for Electrical Systems.

F. Section 260533.16 - Boxes for Electrical Systems.

G. Section 260553 - Identification for Electrical Systems: Identification products.

H. Section 281500 - Integrated Access Control Hardware Devices

1.4 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

B. TIA-568 (SET) - Commercial Building Telecommunications Cabling Standard Set 2020.

C. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards 2009c, with Addendum (2016).

D. TIA-569 - Telecommunications Pathways and Spaces 2019e.

E. TIA-606 - Administration Standard for Telecommunications Infrastructure 2017c.

F. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises 2019d.

G. UL 444 - Communications Cables Current Edition, Including All Revisions.

H. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers Current Edition, Including All Revisions.

I. UL 1863 - Communications-Circuit Accessories Current Edition, Including All Revisions.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the work with other trades to avoid placement of other utilities or obstructions within the spaces dedicated for communications equipment.
2. Coordinate arrangement of communications equipment with the dimensions and clearance requirements of the actual equipment to be installed.
3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.6 SUBMITTALS

A. See Section 013300 - Submittal Procedures, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

C. Evidence of qualifications for installer.

D. Field Test Reports.

E. Project Record Documents: Prepared and approved by BICSI Registered Communications Distribution Designer (RCDD).
1. Record actual locations of outlet boxes and distribution frames.
2. Show as-installed color coding, pair assignment, polarization, and cross-connect layout.
3. Identify distribution frames and equipment rooms by room number on drawings.

F. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of project record documents.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: At least 3 years experience manufacturing products of the type specified.

B. Installer Qualifications: A company having at least 3 years experience in the installation and testing of the type of system specified, and:
1. Employing a BICSI Registered Communications Distribution Designer (RCDD).
2. Supervisors and installers factory certified by manufacturers of products to be installed.

C. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Keep stored products clean and dry.

1.9 WARRANTY

A. Correct defective Work within a 2 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.1 SYSTEM DESIGN

A. Provide a complete permanent system of cabling and pathways for voice and data communications, including cables, conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlets.
   1. Comply with TIA-568 (SET) (cabling) and TIA-569 (pathways) (commercial standards).
   2. Provide fixed cables and pathways that comply with NFPA 70 and TIA-607 and are UL listed or third party independent testing laboratory certified.
   3. Provide connection devices that are rated for operation under conditions of 32 to 140 degrees F (0 to 60 degrees C) at relative humidity of 0 to 95 percent, noncondensing.
   4. In this project, the term plenum is defined as return air spaces above ceilings, inside ducts, under raised floors, and other air-handling spaces.

B. System Description:
   1. Building Entrance Cable: By others.
   2. Offices and Work Areas: Provide quantity of outlets as indicated on drawings.

C. Main Distribution Frame (MDF): Centrally located support structure for terminating horizontal cables that extend to telecommunications outlets, functioning as point of presence to external service provider.
   1. Locate main distribution frame as indicated on the drawings.

D. Cabling to Outlets: Specified horizontal cabling, wired in star topology to distribution frame located at center hub of star; also referred to as "links".

2.2 PATHWAYS

A. Conduit: As specified in Section 260533.13; provide pull cords in all conduit.

B. Cable Trays: As specified in Section 260536.

C. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.

2.3 COPPER CABLE AND TERMINATIONS

A. Manufacturers:
   1. CommScope
   2. Panduit.
   3. Superior Essex
   4. Ber Tek

B. Copper Horizontal Cable:
   1. Description: 100 ohm, balanced twisted pair cable complying with TIA-568.2 and listed and labeled as complying with UL 444.
   2. Cable Type - Data: TIA-568.2 Category 6 UTP (unshielded twisted pair); 23 AWG.
   3. Cable Capacity: 4-pair.
   4. Cable Applications:
      a. Plenum Applications: Use listed NFPA 70 Type CMP plenum cable.

b. Riser Applications: Use listed NFPA 70 Type CMR riser cable or Type CMP plenum cable.
c. General Purpose Applications: Use listed NFPA 70 Type CM/CMG general purpose cable, Type CMR riser cable, or Type CMP plenum cable.

5. Cable Jacket Color
   a. County LAN Data Cable: White
   b. State LAN Data Cable: Black

C. Copper Cable Terminations: Insulation displacement connection (IDC) type using appropriate tool; use screw connections only where specifically indicated.

D. Jacks and Connectors: Modular RJ-45, non-keyed, terminated with 110-style insulation displacement connectors (IDC); high impact thermoplastic housing; suitable for and complying with same standard as specified horizontal cable; UL 1863 listed.
1. Performance: 500 mating cycles.
2. Data Jacks: 8-position modular jack, color-coded for both T568A and T568B wiring configurations.
3. Color to match cabling.
4. Product(s):
   a. Leviton.
   b. Bryant
   c. Panduit

2.4 COMMUNICATIONS OUTLETS

A. Outlet Boxes: Comply with Section 260533.16.
1. Provide depth as required to accommodate cable manufacturer's recommended minimum conductor bend radius.
2. Minimum Size, Unless Otherwise Indicated:
   a. Data Outlets: 4 inch square by 2-1/8 inch deep (100 by 54 mm) trade size.

B. Wall Plates:
1. Comply with system design standards and UL 514C.
2. Accepts modular jacks/inserts.
3. Capacity:
   a. Data Outlets: Single-gang plate with 4 ports.
4. Wall Plate Material/Finish - Flush-Mounted Outlets: Type 302 stainless steel.

2.5 GROUNDING AND BONDING COMPONENTS

A. Comply with TIA-607.

B. Comply with Section 260526.

2.6 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

B. Comply with Section 260553.

PART 3 EXECUTION

3.1 INSTALLATION - GENERAL

A. Comply with latest editions and addenda of TIA-568 (SET) (cabling), TIA-569 (pathways), TIA-607 (grounding and bonding), NECA/BICSI 568, NFPA 70, and SYSTEM DESIGN as specified in PART 2.

B. Grounding and Bonding: Perform in accordance with TIA-607 and NFPA 70.

C. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 078400.

3.2 INSTALLATION OF PATHWAYS

A. Install pathways with the following minimum clearances:
1. 48 inches (1220 mm) from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
2. 12 inches (300 mm) from power conduits and cables and panelboards.
3. 5 inches (125 mm) from fluorescent and high frequency lighting fixtures.
4. 6 inches (150 mm) from flues, hot water pipes, and steam pipes.

B. Conduit, in Addition to Requirements of Section 260533.13:

C. Outlet Boxes:
1. Coordinate locations of outlet boxes provided under Section 260533.16 as required for installation of telecommunications outlets provided under this section.
   a. Mounting Heights: Unless otherwise indicated, as follows:
      1) Data Outlets: 18 inches (450 mm) above finished floor.
   b. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
   c. Unless otherwise indicated, provide separate outlet boxes for line voltage and low voltage devices.

3.3 INSTALLATION OF EQUIPMENT AND CABLING

A. Cabling:
1. Do not bend cable at radius less than manufacturer's recommended bend radius; for unshielded twisted pair use bend radius of not less than 4 times cable diameter.
2. Do not over-cinch or crush cables.
3. Do not exceed manufacturer's recommended cable pull tension.
4. When installing in conduit, use only lubricants approved by cable manufacturer and do not chafe or damage outer jacket.

B. Service Loops (Slack or Excess Length): Provide the following minimum extra length of cable, looped neatly:
1. At Distribution Frames: 120 inches (3000 mm).

C. Copper Cabling:
1. Category 5e and Above: Maintain cable geometry; do not untwist more than 1/2 inch (12 mm) from point of termination.
2. For 4-pair cables in conduit, do not exceed 25 pounds (110 N) pull tension.
3. Use T568B wiring configuration.

D. Identification:
1. Use wire and cable markers to identify cables at each end.
2. Use manufacturer-furnished label inserts, identification labels, or engraved wallplate to identify each jack at communications outlets with unique identifier.

3.4 FIELD QUALITY CONTROL

A. See Section 014000 - Quality Requirements, for additional requirements.

B. Comply with inspection and testing requirements of specified installation standards.

C. Visual Inspection:
   1. Inspect cable jackets for certification markings.
   2. Inspect cable terminations for color coded labels of proper type.
   3. Inspect outlet plates and patch panels for complete labels.

D. Testing - Copper Cabling and Associated Equipment:
   1. Category 5e and Above Links: Perform tests for wire map, length, attenuation, NEXT, and propagation delay.

E. Final Testing: After all work is complete, including installation of telecommunications outlets, and telephone dial tone service is active, test each voice jack for dial tone.

END OF SECTION 271000

MONTGOMERY COUNTY NY

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DIVISION 28

Electronic Safety and Security

SECTION 281500 - INTEGRATED ACCESS CONTROL HARDWARE DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes access control door hardware for the following:
   1. Swinging doors.
   2. Other doors to the extent indicated.

B. Section includes, but is not necessarily limited to, the following for the integrated access control security and site management system:
   1. Electrified and Integrated Access Control Card Key Door Hardware

C. Related Sections include the following:
   1. Division 01 Section “Summary” for Work performed under separate contracts by Owner.
   2. Division 08 Section “Door Hardware Schedule”.
   3. Division 08 Section "Hollow Metal Doors and Frames."
   4. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
   5. Division 08 Section "Door Hardware".
   6. Division 26 Section "Electrical" for connections to electrical power system and for low-voltage wiring work.
   7. Division 27 Section "Communications" for connections to the LAN.

D. References:
   1. ANSI A117.1 (1998) - Accessible and Usable Buildings and Facilities.
   2. IBC - International Building Code
   3. NFPA 70 (2002) - National Electrical Code.
   4. NFPA 80 (1999) - Fire Doors and Windows.
   5. NFPA 101 (2006) - Life Safety Code.
   6. UL 294 - Access Control Systems.
   7. UL 1076 - Proprietary Burglar Alarm Units and Systems.

E. Products installed, but not provided under this Section include the following. Coordination to remain a requirement of this Section.
   1. Security or High Security keyed cylinders, including provisions for temporary construction keying, for mechanical override at access control locking hardware to be furnished under Division 8 Section "Door Hardware".

1.3 ACTION SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. System Operational Descriptions: Complete system operational narratives for the integrated access controlled openings defining the owner's prescribed requirements for the opening functionality. Narratives include, but are not limited to, the following situations: normal secured/unsecured state of door; authorized access; authorized egress; unauthorized access; unauthorized egress; fire alarm and loss of power conditions, and interfaces with other building control systems.

C. Shop Drawings: Details of electrified integrated locking hardware and access control firmware, indicating the following:
   1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication and control of the access control system electrified hardware and firmware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
      a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
      b. Complete (risers, point-to-point) access control system block wiring diagrams.
   2. Electrical Coordination: Coordinate with related Electrical Sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Upon request provide a copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified and authorized provider of the primary access control components.

1.4 INFORMATIONAL SUBMITTALS

A. Sample Warranties and Maintenance Agreements: Special warranties and maintenance agreements specified in this Section.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For security system to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
   1. Provide manufacturers operating and maintenance manuals for each item comprising the complete access control and site management installation in quantity as required in Division 01, Closeout Submittals. The manual to include the name, address, and telephone number of the supplier/integrator providing the installation and the nearest service representatives for each item of equipment included in the system.
   2. As-Built Drawings: During system installation, the Contractor to maintain a separate hard copy set of drawings, elevation diagrams, and wiring diagrams of the access control system to be used for record drawings. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

1.6 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum of five (5) years of documented experience in providing access control and security systems equipment and software similar to that indicated for this Project and that have a proven record of successful in-service performance.
   1. Software and access control systems components to have been previously and thoroughly tested together with proven installations similar in size and functionality to the design requirements indicated for this Project.

B. System Integrator Qualifications: Systems Integrators, verifiably factory trained and certified by the primary product manufacturers, with a minimum of three (3) years documented experience installing complete integrated access control systems similar in material, design, and scope to that indicated for this Project and whose work has resulted in construction with a proven record of successful in-service performance. Qualifications include, but are not necessarily limited, to the following:
   1. References: Provide a list of references for similar projects including contact name, phone number, name and type of project.
   2. Professional Staffing: Firms to have a dedicated access control systems integration department with full time, experienced professionals on staff experienced in providing on site consulting services for both electrified door hardware and integrated access control systems installations.
   3. Factory Training: Installation and service technicians are to be competent factory trained and certified personnel capable of maintaining the system.
   4. Service Center: Firms to have a service center capable of providing training, in-stock parts, and emergency maintenance and repairs at the Project site with 24-hour/7-days a week maximum response time.

C. Installer Qualifications: Certified technicians, verifiably authorized with the primary product manufacturers for installation of IP-Enabled, Wireless, and Power-over-Ethernet Access Control products in accordance with documented instructions and NFPA 80.
   1. ASSA ABLOY access control products are required to be installed only through designated "Preferred Installers" with Intertek Qualified Hardware Installer certification.
   2. Installation technicians are authorized by Intertek to apply supplemental serialized labels to Warnock-Hersey fire-rated openings modified after access control hardware has been installed.

D. Source Limitations: Obtain the access control door hardware, system firmware and application software specified in this Section from a single source, qualified supplier/integrator unless otherwise indicated.
   1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
   2. Provide integrated access control door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Regulatory Requirements: Comply with NFPA 70, NFPA 80, NFPA 101 and ANSI A117.1 requirements and guidelines as directed in the model building code including, but not limited to, the following:
   1. Comply with NFPA 70 "National Electrical Code", including electrical components, devices, and accessories listed and labeled as defined in Article 100 by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
   2. Where indicated to comply with accessibility requirements, comply with Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," and ANSI A117.1.
   3. Comply with NFPA 101 "Life Safety Code" for doors in a means of egress.
   4. Comply with NFPA 80 "Fire Doors and Windows" for fire labeled opening assemblies.
   5. The installed access control system shall conform to all local jurisdiction requirements.

F. Keying Conference: Reference Division 8 Section "Door Hardware".

G. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier/Dealer, Systems Integrator, and Contractor to review proper methods and procedures for receiving, handling, and installing the access control system hardware. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedules.
   1. Inspect and discuss Division 26 electrical roughing-in and similar preparatory work performed by other trades.
   2. Review and verify sequence of operation descriptions for each unique access controlled opening.
   3. Review and finalize construction schedule and verify availability of materials.
   4. Review the required inspecting, testing, commissioning, and demonstration procedures.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Do not store electronic access control hardware, software or related accessories at Project site without prior authorization.
   1. Access control firmware and software: Where approved and directed, inventory upon receipt and store electronic access control equipment in a secure, temperature and humidity controlled environment in original manufacturer's sealed containers.

B. Tag each item or package separately with identification related to the final Access Control Door Schedule, and include basic installation instructions with each item or package.

C. Deliver permanent keys, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner established at the “Pre-Submittal Conference".

1.8 COORDINATION

A. Coordinate quantity and arrangement of assemblies with ceiling space configuration and with components occupying ceiling space, including structural members, pipes, air-distribution components, raceways, cable trays, recessed lighting fixtures, and other items.

B. Access Control System Electrical Coordination: Coordinate the layout and installation of scheduled electrified door hardware, and related access control equipment, with required connections to source power junction boxes, power supplies, detection and monitoring hardware and fire alarm system.
   1. Door Hardware Interface: The card key access control system to interface and be connected to electronic door control hardware (electromechanical locks, electric strikes, magnetic locks, door position switches, other monitoring contacts, and related auxiliary control devices) as described under Division 8 "Door Hardware". Coordinate the installation and configuration of specified door hardware being monitored or controlled with the controls, software and access control hardware specified in this Section.

C. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing electrified door hardware and access control system components. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing access control system hardware to comply with indicated requirements.

D. Door and Frame Preparation: Related Division 08 Sections (Steel, Aluminum and Wood) doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.9 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article will not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and are in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of the installed access control system hardware and software that fails in materials or workmanship, including all related parts and labor, within specified warranty period after final testing and acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods (Electrified Access Control Door Hardware):
1. Two years for Electrified, Wiegand Output, and IP-Enabled Access Control Door Hardware.

E. Maintenance Support and Extended Service Agreement: Submit for Owner’s consideration an optional extended Service Agreement for the installed access control system, including support for software related issues. The extended Service Agreement is considered elective and is without manufacturer's requirement stipulating mandatory coverage for owner and/or vendor system support.
1. A published copy of this agreement to be included with the submittal package
2. Support for the installed access control system components is provided through the vendor under a 24 hour technical assistance program.
3. Access control and management system components are to be available on a one-day turn around time frame from the manufacturer.
4. Primary systems manufacturer to offer and provide remote modem or internet access for direct factory support to the vendor. The factory level support to include diagnostics and troubleshooting support on systems related issues at no additional cost to the owner.

F. Access Control Software Upgrades: Version upgrades and "fix" releases to the access control system software are available at no extra charge as long as the version of software provided under this specification remains the current manufacturer’s version or for up to (2) years after a new version release.
1. Major access control software revisions that provide new functionality to the product provided free of charge for up to one (1) year from the date of substantial completion.
2. Access control system software is to be upgradable as may be required or as necessary, to expand and manage the owner’s site or sites. Upgrades are to be offered at a published flat fee for the primary system software, with single license modules included in the primary fee structure. System upgrades offered at a costing structure based upon the original number of licensed modules issued, or on those to be purchased at a future date, are not allowed.
3. As part of the submittal package, provide a list of available software upgrades and/or expansions modules. List to identify related costs for upgrades, or expansions to the original system, up to the next qualifying operational level.

1.10 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of the installed access control system hardware and components.

B. Maintenance Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous (6) months full maintenance by skilled employees of the Systems Integrator. Include repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation.
1. Provide parts and supplies as used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 INTEGRATED WIRED OUTPUT ACCESS CONTROL, MULTI-CLASS READER

A. Integrated Wired Output Multi-Class Mortise Locks: Wiegand or Open Supervised Device Protocol (OSDP) output ANSI A156.13, Grade 1, mortise lockset with integrated card reader with or without keypad option, request-to-exit signaling, door position status switch, and latchbolt monitoring in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle trim, 3/4" deadlocking anti-friction latch, and 1" case-hardened steel deadbolt. Lock is U.L listed and labeled for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
   1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand or OSDP compatible access control systems. Latchbolt monitoring and door position switch act in conjunction to report door-in-frame (DPS) and door latched (door closed and latched) conditions.
   2. Integrated reader supports the following credentials:
      a. 125kHz proximity credentials: HID, AWID, Indala, and EM4102.
      b. 13.56 MHz proximity credentials: HID Secure Identity Object™ (SIO) on iCLASS Seos, HID iCLASS, HID iCLASS SE/SR, MIFARE Classic, DESFire EV1 and EV2.
      c. 2.4 GHz credentials: Secure Identity Object™ (SIO) on Mobile IDs (Bluetooth Smart)
      d. ISO14443A/B (PIV-compatible Transparent FASC-N read) available with pivCLASS variant
      e. NFC-enabled mobile phones
      f. PIN code only or PIN + credential with keypad option.
   3. 12VDC external power supply required for reader and lock, with optional 24VDC lock solenoid. Fail safe or fail secure options.
   4. Energy Efficient Design: Provide lock bodies which have a holding current draw of 500mA maximum, and can operate on either 12 or 24 volts. Locks are to be field configurable for fail safe or fail secure operation.
   5. Support end-of-line resistors contained within the lock case.
   6. Installation requires only one cable run from the lock to the access control panel without requirements for additional proprietary lock panel interface boards or modules.
   7. Installation to include manufacturer's access control panel interface board or module where required for Wiegand or OSDP output protocol.
   8. Manufacturers:
      a. Corbin Russwin (RU) – ML2000 SN Series.
      b. Sargent Manufacturing (SA) – SN200/SN210 8200 Series.

B. Integrated Wired Output Multi-Class Exit Hardware: Wiegand output ANSI 156.3 Grade 1 rim, mortise, and vertical rod exit device hardware with integrated card reader with or without keypad option, latchbolt and touchbar monitoring, and request-to-exit signaling, in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or "fire exit hardware" for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.
   1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand or OSDP compatible access control systems. Inside push bar (request-to-exit) signaling and door position (open/closed status) monitoring (via separately connected DPS).
   2. Integrated reader supports the following credentials:
      a. 125kHz proximity credentials: HID, AWID, Indala, and EM4102.
      b. 13.56 MHz proximity credentials: HID Secure Identity Object™ (SIO) on iCLASS Seos, HID iCLASS, HID iCLASS SE/SR, MIFARE Classic, DESFire EV1 and EV2.
      c. 2.4 GHz credentials: Secure Identity Object™ (SIO) on Mobile IDs (Bluetooth Smart)
      d. ISO14443A/B (PIV-compatible Transparent FASC-N read) available with pivCLASS variant
      e. NFC-enabled mobile phones
      f. PIN code only or PIN + credential with keypad option

3. 12VDC external power supply required for reader. 24VDC required for solenoid operated exit trim. Fail safe or fail secure options.
4. Installation requires only one cable run from the exit hardware to the access control panel without requirements for additional proprietary lock panel interface boards or modules.
5. Competitor Alternates Allowed Option: Installation to include manufacturer's access control panel interface board or module where required for Wiegand or OSDP output protocol.
6. Manufacturers:
   a. Corbin Russwin (RU) – ED5000 SN Series.
   b. Sargent Manufacturing (SA) – SN200/SN210 80 Series.

2.2 CABLES AND WIRING

A. Comply with Division 27 Section "Conductors and Cables for Electronic Safety and Security."

B. Data Line Supervision: System to include alarm initiation capability in response to opening, closing, shorting, or grounding of data transmission lines.

C. Install appropriate number of conductor pairs, in the wire gage (AWG) recommended by manufacturer, corresponding to the electronic locking functions specified, amperage drawn and distances covered between the power supplies, power transfer devices, electrified hardware and access control equipment.

2.3 ACCESS CONTROL HARDWARE FINISHES

A. Standard: Comply with BHMA A156.18.

B. Protect mechanical finishes on exposed surfaces from damage by applying temporary protective coverings before shipping.

C. Where specified, finishes on integrated card key locksets or exit hardware to incorporate an FDA recognized antimicrobial coating (i.e., MicroShield™) listed for use on equipment as a suppressant to the growth and spread of a broad range of bacteria, algae, fungus, mold and mildew.

D. BHMA Designations: Comply with base material and finish as specified.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance of the installed access control system.

B. Examine roughing-in for electrical source power to verify actual locations of wiring connections before electrified and integrated access control door hardware installation.

C. Examine roughing-in for LAN and control cable conduit systems to PCs, controllers, card readers, and other cable-connected devices to verify actual locations of conduit and back boxes before device installation.

D. Notify architect of any discrepancies or conflicts between the specifications, drawings and scheduled access controlled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Doors and frames at scheduled access controlled openings to be properly prepared to receive specified electrified and access control hardware and connections without additional in-field modifications.

3.3 INSTALLATION

A. Install each item of electronic integrated door hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

B. Mounting Heights: Mount electronic integrated door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
   1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
   2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
   3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."

C. Boxed Power Supplies: Verify locations.
   1. Configuration: Provide the least number of power supplies required to adequately serve doors with access control hardware and equipment.

D. Final connect the system control switches (integrated card key locking hardware, remote readers, keypads, display terminals, biometrics), and monitoring, and signaling equipment to the related Controller devices at each opening to properly operate the electrified door and access control hardware according to system operational narratives.

E. Retrofitting: Install each door hardware and access control item to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

F. System Application Software: Install, and test application(s) software and databases for the complete and proper operation of systems involved. Assign software license(s) to Owner.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
   1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
   2. Submit documentation of incomplete items in the following formats:
      a. PDF electronic file.
      b. Electronic formatted file integrated with the Openings Studio™ door opening management software platform.

B. Commissioning and Testing Schedule: Prior to final acceptance of the access control system installation, the following testing and documentation to be performed and provided to the Owner.

1. Inspection: Verify that units and controls are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.
2. Pre-testing: Program and adjust the system and pretest all components, wiring, and functions to verify they conform to specified requirements. Provide testing reports indicating devices tested, pass/fail status, and actions taken to resolve problem(s) on failed tests.
3. Acceptance Test Schedule: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
4. Provide “as designed” drawings showing each device and wiring connection and electronic enclosure legends indicating cabling in and out.
5. Provide a complete set of operating instructions for access control hardware devices and a complete software user manual. The documentation includes module reference guides for each electronic enclosure.

3.5 ADJUSTING

A. Adjust and check each operating item of integrated access control door hardware, and each door opening to ensure proper secured operation and function of every unit. Replace units that cannot be adjusted to operate as intended.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by access control system installation.

B. Clean operating items as necessary to restore proper finish and provide final protection and maintain conditions that ensure access control door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Engage an authorized systems manufacturer representative to train Owner's maintenance personnel to adjust, operate, and maintain electronic integrated door hardware and the access control system.

3.8 ACCESS CONTROL HARDWARE SETS

A. The access control system hardware sets listed below represent the design intent and direction of the owner, architect, and security consultant (as applicable). They are intended as a guideline only and should not be considered a detailed opening schedule. Discrepancies, conflicting, and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

C. Refer to Section 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 281500