



**TETRA TECH**  
ARCHITECTS & ENGINEERS

SED NO. 62-18-01-06-0-005-018

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Ithaca, New York  
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Albany, New York

## **WALLKILL CENTRAL SCHOOL DISTRICT**

**WALLKILL, NEW YORK**

**PROJECT NO. 17597-22002B**

**RECONSTRUCTION TO  
PLATTEKILL ELEMENTARY SHOOOL**

**DECEMBER 18, 2023**

To the best of the Architect's knowledge, information and belief, the design of this project conforms to all applicable provisions of the New York State Uniform Fire Prevention and Building Code, the New York State Energy Conservation Construction Code, and the building standards of the New York State Education Department. It is a violation of the Education Law of the State of New York for any person to alter or modify this document in any way unless acting under the direction of a professional architect.

**BID SET**

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**PLEASE NOTE**

All sections of the following **SPECIFICATIONS** are sequentially numbered, beginning with Page 1 and concluding with the last numbered page bearing the marking "END OF SECTION -- -- --".

Sections may include additional attachments as noted in following list of Specification sections.

**SPECIFICATIONS**

<b><u>SECTION</u></b>	<b><u>TITLE</u></b>	<b><u>SECTION</u></b>	<b><u>TITLE</u></b>
<b><u>DIVISION 01 - GENERAL REQUIREMENTS</u></b>		01 32 00	Construction Progress Documentation (with one attachment)
01 08 00	General Commissioning Requirements	01 33 00	Submittal Procedures (with three attachments)
01 10 00	Project Summary of Work - Project Schedule	01 35 26	Governmental Safety Requirements
01 21 00	Allowances (with one attachment)	01 40 00	Quality Requirements
01 23 00	Alternates	01 40 01-A1	Statement of Special Inspections
01 25 00	Substitution Procedures (with one attachment)	01 42 00	References
01 26 00	Contract Modification Procedures	01 50 00	Temporary Facilities and Controls
01 29 00	Payment Procedures (with one attachment)	01 60 00	Product Requirements
01 31 00	Project Management and Coordination (with two attachments)	01 73 00	Execution
		01 77 00	Closeout Procedures
		01 78 23	Operation and Maintenance Data
		01 78 39	Project Record Documents



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**SECTION TITLE**

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01 79 00     Demonstration and Training

**DIVISION 02 – EXISTING CONDITIONS**

02 41 19     Selective Demolition

**DIVISION 03 - CONCRETE**

03 30 53     Miscellaneous Cast-In-Place  
Concrete

**DIVISION 07 - THERMAL AND MOISTURE  
PROTECTION**

07 84 13     Penetration Firestopping

07 92 00     Joint Sealants

**DIVISION 22 – PLUMBING**

22 05 00     Common Work Results for Plumbing

22 05 17     Sleeves and Sleeve Seals for  
Plumbing Piping

22 05 19     Meters and Gauges for Plumbing  
Piping

22 05 23     General Duty Valves for Plumbing  
Piping

22 05 29     Hangers and Supports for Plumbing  
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22 05 53     Identification for Plumbing Piping  
and Equipment

22 07 19     Plumbing Piping Insulation

22 11 13     Facility Water Distribution Piping

22 11 16     Domestic Water Piping

22 11 19     Domestic Water Piping Specialties

22 14 29     Sump Pumps

22 42 13.13   Commercial Water Closets

22 42 13.16   Commercial Urinals

22 45 00     Emergency Plumbing Fixtures

**DIVISION 26 – ELECTRICAL**

26 05 00 .01 Common Work Results for Electrical

**DIVISION 31 – EARTHWORK**

31 20 00     Earth Moving

**DIVISION 32 – EXTERIOR  
IMPROVEMENTS**

32 12 16     Asphalt Paving

32 13 13     Concrete Paving

32 92 00     Turf and Grasses

**DIVISION 33 – UTILITIES**

33 11 13     Potable Water Wells

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**SECTION TITLE**

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LIST OF DRAWING SHEETS

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## GENERAL INFORMATION

G001 Title Sheet  
G100 Symbols and Abbreviations

**Plattekill Elementary School**

## CODE COMPLIANCE

DG350 Code Compliance Review  
DG351 First Floor - Scope of Work and Rescue Window Locations

## PLUMBING

DP001 Site Plan  
DP130 First Floor Key Plan, Detail and Schedules  
DP131 Partial Basement Plan, Schedule and Details  
DP132 Details

All drawings dated December 18, 2023.



## NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN, that sealed Bids, in duplicate, are sought and requested by the Board of Education, Wallkill Central School District Board of Education (hereinafter called "Owner"), for the Reconstruction to Plattekill Elementary School.

Separate bids are requested for the following Contracts:

Plumbing Work – PC-1

in accordance with the Drawings, Project Manual (including Conditions of the Contract and Specifications), and other Bidding and Contract Documents prepared by:

Tetra Tech Engineers, Architects & Landscape Architects, P.C. d/b/a  
Tetra Tech Architects & Engineers  
10 Brown Road  
Ithaca, New York 14850

A pre-bid conference for potential Bidders and other interested parties will be held at the Main Office of the Plattekill Elementary School, 1270 NY-32, Plattekill, New York 12568:

Plumbing – **3:30 PM on Wednesday, October 16, 2024.**

Sealed Bids will be **received by the Owner until 3:00 PM on Tuesday, October 29, 2024**, at the Wallkill Central School District Administration Building, 1500 State Route 208, Wallkill, New York 12589.

Sealed Bids will be **opened and publicly read aloud at 3:30 PM on Tuesday, October 29, 2024**, at the Wallkill Central School District Administration Building, 1500 State Route 208, Wallkill, New York 12589.

For the convenience of potential Bidders and other interested parties, the Bidding Documents may be examined at the following locations:

Reed Construction Data, Document Processing Center, 30 Technology Parkway South, Suite 500,  
Norcross, GA 30092-2912  
Eastern Contractors Association, Inc., 6 Airline Drive, Colonie, NY 12205  
McGraw Hill Construction/Dodge, c/o Dataflow, 71 Fuller Road, Albany, NY 12205  
Wallkill Central School District, 1500 State Route 208, Wallkill, New York 12589  
Tetra Tech Architects & Engineers, 10 Brown Road, Ithaca New York 14850

Complete digital sets of Bidding Documents, drawings and specifications, may be obtained online as a download at [www.tetratchaeprojectplanroom.com](http://www.tetratchaeprojectplanroom.com) 'public projects' for a non-refundable fee of \$49.00 (Forty Nine Dollars).

Complete hard copy sets of Bidding Documents, drawings and specifications, may be obtained online at [tetratchaeprojectplanroom.com](http://tetratchaeprojectplanroom.com) 'projects'. Checks shall be made payable to **Wallkill Central School District** in the sum of \$100.00 (One Hundred Dollars) for each set of documents. A scanned copy of the deposit check can be emailed to [projects@revplans.com](mailto:projects@revplans.com). Once the scanned copy of the executed deposit check is received, Bidding Documents will be shipped. Mail checks to Lohrius Blueprint, 226 Newtown Road, Plainview, New York 11803. Plan deposit is refundable in accordance with the terms in the Instructions to Bidders. Any bidder requiring documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs (either by providing FedEx/UPS account number or being charged a flat rate by the printer).



Please note REV [tetrattechprojectplanroom.com](http://tetrattechprojectplanroom.com) is the designated location and means for distributing and obtaining all bid package information, electronic or hard copy. Only those Contract Documents obtained in this manner will enable a prospective bidder to be identified as a registered plan holder. The Provider takes no responsibility for the completeness of Contract Documents obtained from other sources. Contract Documents obtained from other sources may not be accurate or may not contain addenda that may have been issued.

All bid addenda will be transmitted to registered plan holders, regardless of receiving electronic or hard copy Bid Documents, via email and will be available at [tetrattechprojectplanroom.com](http://tetrattechprojectplanroom.com). Registered plan holders who have paid for hard copies of the bid documents will need to make the determination if hard copies of the addenda are required for their use, and coordinate directly with REV for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

As bid security, each Bid shall be accompanied by a certified check or Bid Bond made payable to the Owner, in accordance with the amounts and terms described in the Instructions to Bidders.

The Owner requires Bids comply with bidding requirements indicated in the Instructions to Bidders. The Owner may, at its discretion, waive informalities in Bids, but is not obligated to do so, nor does it represent that it will do so. The Owner also reserves the right to reject any and all Bids. The Owner will not waive informalities which would give one Bidder substantial advantage or benefit not enjoyed by all affected Bidders. Bids may not be withdrawn before 45 days following the Bid opening thereof, unless an error is claimed by the Bidder in accordance with the Instructions to Bidders.



## INSTRUCTIONS TO BIDDERS

### ARTICLE 1

#### PROJECT AND BIDDING INFORMATION

1. Project Identification: Reconstruction to Plattekill Elementary School
  - a. Project Location: Wallkill Central School District
2. Owner: Wallkill Central School District
  - a. Address: 1500 Route 208, Wallkill, New York 12589
3. Bid Opening: Bids will be received until the following Bid opening date and time, at the following location:
  - a. Bid Received Time, Date, and Location: Sealed Bids will be **received until 3:00 PM, local time, on Tuesday, October 29, 2024**, at the Wallkill District Administration Building, 1500 State Route 208, Wallkill, New York 12589.
  - b. Bid Opening Time, Date, and Location: Sealed Bids will be **opened and publicly read aloud at 3:30 PM, local time, on Tuesday, October 29, 2024**, at the Wallkill District Administration Building, 1500 State Route 208, Wallkill, New York 12589.
4. Bidders are invited to submit Bids for any, or all of, the following Contracts:
  - a. Plumbing Work – PC-1
5. Access to the Project Site: Subject to Owner’s prior approval of timing, Bidders will be permitted access to Project site on Monday through Friday, from 8:00 AM until 4:30 PM except legal holidays.
  - a. Contact Owner’s representative designated below, prior to visiting Project site, to arrange access.
  - b. Owner’s representative:

Primary Contact:

Mr. Joe Barone, Construction Manager, Barone Construction Group, Inc., 23 New Paltz Road, Highland, New York 12528, Phone (845) 691-2244.

Secondary Contact – only if primary is not available:

Mr. Brian Devincenzi, Assistant Superintendent for Support Services, 1500 State Route 208, Wallkill, New York, 12589, Phone (845) 895-7102.
6. Pre-Bid Conference: A pre-bid conference for potential Bidders and other interested parties will be held as follows:
  - a. Pre-Bid Conference Date and Time: Wednesday, October 16, 2024 at 3:30 PM, local time.



- b. Pre-Bid Conference Location: Main Office of the Plattekill Elementary School, 1270 NY-32, Plattekill, New York 12568.
- 7. Agreement Form: The following will be used as the basis for the form of agreement between the Owner and the Contractor (Owner-Contractor Agreement):
  - a. Standard Form of Agreement Between Owner and Contractor, AIA Document **A132**.

## ARTICLE 2 DEFINITIONS

- 1. Definitions in the General Conditions of the Contract for Construction, AIA Document **A232**, or in other Contract Documents are applicable to the Bidding Documents.
  - a. “Addenda”: Written or graphic instruments issued by the Architect prior to execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.
  - b. “Bid”: Complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.
    - 1) “Base Bid”: Sum stated in the Bid for which Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated for Alternates.
    - 2) “Alternates”: Amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.
  - c. “Bidder”: Person or entity who submits a Bid.

## ARTICLE 3 BIDDING PROCEDURES

- 1. Bid Form: Complete the Bid Form provided, in duplicate, with all blank spaces for Base Bid and Alternates legibly completed in ink, or typewritten, in both words and figures.
  - a. In the event of a discrepancy between amounts written in words and figures, the amount written in words shall govern.
  - b. Bid Forms without amounts expressed both in words and figures will not be accepted.
- 2. Bid Attachments: Complete and submit the following attachments with the Bid Form:
  - a. Attachment #1: Non-Collusive Bidding Certification.
  - b. Attachment #2: Certified Corporate Resolution.
  - c. Attachment #3: Iranian Energy Divestment Certification.
  - d. Attachment #4: Certificate on Violations.



e. Attachment #5: Subcontractors List.

- 1) Submit Subcontractors List, on form provided, in a separate sealed envelope bearing the Bidder's name, name of Contract, and title "Subcontractors List".

3. Bid Security:

a. Submit, with the Bid Form, bid security in the amount of five percent of the Base Bid, in any of the following forms:

- 1) Certified check, payable to the Owner; or
- 2) Bid Bond, payable to the Owner, on Bid Bond, AIA Document A310, or standard bid bond form, duly executed by the Bidder as principal, with a surety company acceptable to the Owner.
  - a) Affix a certified and current copy of the power of attorney for the attorney-in-fact who executes the required bond on behalf of the surety.

b. Within three days following the Bid opening, bid security will be returned to all Bidders, except the three apparent lowest Bidders.

- 1) Within three days following execution of the Owner-Contractor Agreement, bid security will be returned to the three apparent lowest Bidders.
- 2) If the Owner-Contractor Agreement has not been executed within 45 days following the Bid opening, bid security will be returned to the three apparent lowest Bidders, except as noted below.

c. Should the accepted Bidder, within 10 days following Notice of Award, fail or refuse to execute the Owner-Contractor Agreement and to provide the required performance and payment bonds, the accepted Bidder will be deemed to have abandoned the Contract and its bid security will be forfeited to the Owner.

4. Bid Submission: Submit each Bid, including attachments, in a sealed envelope bearing the Bidder's name and address, name of Contract, and name of Project. Enclose the Subcontractors List (Bid Form Attachment #5) in a separate sealed envelope within the Bid envelope. Deliver Bid to location specified no later than the Bid opening date and time indicated. Any Bid received after the Bid opening date and time indicated will be returned unopened.

5. Bid Withdrawal:

- a. Bid may be withdrawn by the Bidder up until the date and time specified for opening of Bids.
- b. Following the Bid opening, Bid may not be withdrawn before 45 days following the Bid opening, except in the case of Bidder error, as follows:
  - 1) If the Bidder claims an error in the Bid, submit a written notice to the Architect, within three days of the Bid opening, describing in detail the nature of the error, submitting documentary evidence or proof of such error.



- a) Failure to deliver such notice and evidence or proof, within the time frame required, constitutes a waiver of Bidder's right to claim error.
- 2) Upon receipt of required notice and evidence or proof, the Owner, in consultation with the Architect, will determine if an excusable error has been made; and if so, the Owner may permit the Bid to be withdrawn. The Owner's determination will be conclusive upon the Bidder, its surety, and all who claim rights under the Bidder.

#### ARTICLE 4 BIDDING DOCUMENTS

1. Bidding Documents include the bidding requirements and the proposed Contract Documents, as follows:
  - a. Bidding requirements consist of the following:
    - 1) Notice to Bidders.
    - 2) Instructions to Bidders.
    - 3) Bid Form, with attachments.
    - 4) Proposed Products Form.
    - 5) Proposed Schedule of Values Form.
    - 6) Bidder's Qualifications Form.
  - b. Proposed Contract Documents consist of the following:
    - 1) Owner-Contractor Agreement.
    - 2) Conditions of the Contract.
    - 3) Drawings.
    - 4) Specifications.
    - 5) Addenda.
2. Bidding Document Interpretations or Corrections:
  - a. Submit requests for Bidding Document interpretation to the Architect, in writing using the provided Pre-Bid Request for Interpretation Form, at least five working days prior to the Bid opening.
  - b. Interpretations or corrections will be issued in the form of written Addenda. The Architect will not make oral interpretations or corrections.
  - c. Notification of addenda will be transmitted to registered plan holders via email and will be available to download at [tetratetchaeprojectplanroom.com](http://tetratetchaeprojectplanroom.com) under 'public projects'.
    - 1) Failure of any Bidder to not download addenda and/or failure to receive any such Addendum by reason of not having registered as a plan holder in accordance with the bidding instructions, shall not relieve the Bidder from any obligation required by the Addendum.
3. Equivalents and Substitutions: The use of manufacturer's brand names, catalog numbers, and similar proprietary identifying data is intended to establish a standard of quality, appearance, and function for those items. It is not the intention of the Owner or the Architect to eliminate from consideration products that are equivalent in quality, appearance, and function to those identified.



- a. Equivalents are pre-award and substitutions are post-award.
  - b. Equivalents:
    - 1) On Proposed Products Form provided, as post-Bid information, identify and list proposed equivalents to specified products as follows:
      - a) Applicable Specification Section and paragraph.
      - b) Proposed manufacturer's name, product brand name, and catalog number of proposed equivalent.
      - c) Note any aspect of the specified product that the proposed equivalent cannot meet.
    - 2) Failure to identify and list proposed equivalents shall be deemed to mean the Bidder will furnish the materials or products indicated in the Contract Documents without exception.
  - c. Substitutions: Refer to Division 01 Specification Section "Substitution Procedures".
4. Any required plan deposit shall be refunded to Bidders who submit a bona fide Bid and return the hard copy (paper) Bidding Documents in full, and in good condition within thirty days following the award of the contract or the rejection of the bids covered by such Bid Documents. If the Bid Documents are not returned in full, or in good condition, 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. Partial reimbursement, in an amount equal to the full amount of such deposit for one set of Bid Documents per non-bidder less the actual cost of reproduction of the Bid Documents as determined by the Architect, shall be made for the return of all other copies of the Bid Documents in good condition within thirty days following the award of the contract or the rejection of the bids covered by such Bid Documents. If the Bid Documents are not returned in full, or in good condition, the cost to replace missing or damaged paper documents will be deducted from the deposit.

#### ARTICLE 5 BIDDER'S REPRESENTATIONS

- 1. By submitting a Bid, Bidder represents that:
  - a. Bidder has visited and thoroughly inspected the Project site, and has become fully informed of the conditions relating to the Project;
  - b. Bidder has received, read, and is thoroughly familiar with the Bidding Documents, including all Addenda issued; and
  - c. Bidder has prepared its Bid based on the materials, equipment and systems required by the Bidding Documents or equivalents.

#### ARTICLE 6 BID CONSIDERATION

- 1. Opening of Bids: At the designated Bid opening date and time, Bids received will be publicly opened and read aloud.



2. Bid Rejection:

- a. The Owner requires Bids comply with bidding requirements; however, the Owner may, at its discretion, waive informalities in Bids. The Owner is not obligated to do so and does not represent that it will do so. The Owner will not waive informalities which would give one Bidder substantial advantage or benefit not enjoyed by all affected Bidders.
- b. The Owner reserves the right to reject any and all Bids not deemed in the best interests of the Owner, if in its judgment the public interest will be promoted thereby.
- c. The Owner reserves the right to reject as “informal” any and all Bids which, in its opinion, are incomplete, conditional, obscure, or contain irregularities of any kind.
- d. In rejecting a Bid, the Owner does not forfeit its right to accept the Bid for any other Contract contained in the Project; and the rejection of a Bid is not necessarily a finding by the Owner of any facts or circumstances which would preclude the Bidder from serving as a subcontractor on any portion of the Project.

3. Bid Acceptance: The Owner intends to award the Contract to the responsible Bidder whose Bid complies with conditions to render it formal, who is able to furnish approved surety bonds, and whose Bid is the lowest number of dollars as defined below.

- a. Lowest Bid may be Base Bid plus any Alternates the Owner desires to accept.
- b. If the acceptance of Alternates does not change the low Bidder, the Owner reserves the right to accept any or all Alternates within 45 days following Notice of Award.

ARTICLE 7  
POST-BID INFORMATION

1. Contractor Qualifications: The Owner may make such investigations as it deems necessary to determine the ability of the Bidder to perform the Work.

- a. The Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request, including the provided Bidder’s Qualifications Form.
- b. The Owner reserves the right to reject any Bid if the evidence submitted, or investigation of Bidder fails to satisfy the Owner that the Bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

2. Owner’s Financial Capability: Successful Bidder may submit request to Owner for information regarding Owner’s financial arrangements for this Project in accordance with the General Conditions, no later than 30 days following the Bid opening.

3. Post-Bid Submittals:

- a. The three apparent low Bidders shall submit the following completed forms within three days following the Bid opening:
  - 1) Proposed Products Form.
  - 2) Proposed Subcontractors Form.
  - 3) Proposed Schedule of Values Form.
  - 4) Upon request, Bidder’s Qualifications Form.



ARTICLE 8  
PERFORMANCE BOND AND PAYMENT BOND

1. Bond Requirements:

- a. The successful Bidder shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder.
- b. Bonds shall be obtained from a surety satisfactory to the Owner, authorized and licensed to do business in the state where the Project is located, and listed in the latest issue of the U.S. Treasury Circular 570. The amount of each bond shall be equal to 100 percent of the Contract Sum. The sufficiency of the bonds is subject to the approval of the Owner and bonds deemed insufficient by the Owner may be rejected.
- c. Affix a certified and current copy of the power of attorney for the attorney-in-fact who executes the required bonds on behalf of the surety.

2. Time of Delivery and Form of Bonds:

- a. Deliver required bonds to the Owner not later than the date the Agreement is entered into.
- b. Use Performance Bond and Payment Bond, AIA Document A312, unless otherwise approved by the Owner.

ARTICLE 9  
MISCELLANEOUS PROVISIONS

1. All applicable laws, ordinances, rules, and regulations of Federal, State, and other authorities having jurisdiction over the Project shall apply to the Contract throughout, and will be deemed included in the Contract as though herein written out in full.

a. Sections of the New York State Labor Law (LL) and the New York State General Municipal Law (GML) include, but are not limited to, the following:

- 1) LL §220, subd. 2: Eight-hour day, 40-hour week.
- 2) LL §220, subd. 3 and LL §220-d: Minimum rate of wage and supplement.
- 3) LL §220-e: Prohibiting discrimination.
- 4) LL §222-a: Prevention of dust hazards.
- 5) GML §103-d: Statement of non-collusion in bids.
- 6) GML §106-b: Payment on public work contracts.
- 7) GML §108: Workmen's compensation insurance.
- 8) GML §109: Assignment of public contracts.

2. Time of Completion: Refer to Division 01 Section "Multiple Contract Summary – Project Schedule".

Attachment: Pre-Bid Request for Interpretation Form

END OF SECTION 00 21 13





**TETRA TECH**  
ARCHITECTS & ENGINEERS

**INSTRUCTIONS TO BIDDERS**  
**ATTACHMENT #1:**  
**PRE-BID REQUEST FOR INTERPRETATION FORM**

**SUBMIT FORM BY EMAIL TO [INE.Wallkill@tetrattech.com](mailto:INE.Wallkill@tetrattech.com)**

**Project No.:** 17597-22002B

**Date:**

**Project Name:** Reconstruction to Plattekill Elementary School

-----  
**Bidder Contact Person:**

**Bidder Company Name:**

**Bidder Phone:**

**Bidder Email Address:**

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**Question Pertains to:**

**Drawing Number:**

**Plan Area:**

**Room Number:**

**Drawing Detail Number:**

**Specification Section:**

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**Question: (Please be specific)**

-----  
**Review by Architect/Engineers:**

**Responded By:** \_\_\_\_\_ **Date:** \_\_\_\_\_

-----  
Submit requests not less than 5 working days prior to the specified Bid Opening date and time. In the event that this question requires clarification or modification of the Bidding Documents, such written information can only be provided by formal Addendum, distributed to all plan holders.





**TETRA TECH**  
ARCHITECTS & ENGINEERS

10 Brown Road  
Ithaca, New York 14850  
(607) 277-7100

Ithaca, New York  
Farmingdale, New York  
Albany, New York

**BID FROM** (Bidder's Name) : \_\_\_\_\_

(Address) : \_\_\_\_\_

Bidder's Telephone : \_\_\_\_\_

Bidder's Facsimile (Fax) : \_\_\_\_\_

Bidder's E-mail Address : \_\_\_\_\_  
(if applicable)

**BID FORM**  
**(submit in duplicate)**

**CONTRACT:** PLUMBING WORK CONTRACT (PC-1)

**PROJECT TITLE:** RECONSTRUCTION TO PLATTEKILL ELEMENTARY SCHOOL

**DATE:** DECEMBER 18, 2023

**PROJECT NO.:** 17597-22002B

**BID TO:** Board of Education  
Wallkill Central School District  
1500 Route 208  
Wallkill, New York 12589

The Bidder hereby certifies that it has examined and fully understands the requirements and intent of the Bidding Documents, including the Bidding Requirements and proposed Contract Documents; and proposes to furnish all labor, materials, and equipment necessary to complete the Work on, or before, the dates specified in the Contract Documents for the **BASE BID** sum of:

\_\_\_\_\_  
(words)

\_\_\_\_\_ (\$ \_\_\_\_\_)  
(figures)

Show all amounts in both words and figures; in the event of a discrepancy between amounts written in words and figures, the amount written in words shall govern.

**Refer to Division 01 Section "Allowances" for description of allowances to be included in the Base Bid above.**



## ALTERNATES

Indicate in the spaces provided below the amount to be added to or the amount to be deducted from (as applicable) the Base Bid if the Owner accepts the following Alternates described in Division 01 Section "Alternates".

Include in the amount of each Alternate, all labor, materials, overhead and profit, modification of Work specified in the Contract Documents, and additional work that may be required by acceptance of the Alternate.

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### **ALTERNATE NO. 1 – REPLACE WATER CLOSET AND URNINAL FLUSH VALVES**

**ADD** to the Base Bid the sum of:

\_\_\_\_\_ ( \$ \_\_\_\_\_ )  
(words) (figures)

**OR**

**DEDUCT** from the Base Bid the sum of:

\_\_\_\_\_ ( \$ \_\_\_\_\_ )  
(words) (figures)

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## LIST OF ADDENDA RECEIVED

No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____

## BID ATTACHMENTS

Enclosed with this Bid are the following attachments:

Attachment #1 - Non-Collusive Bidding Certification.  
Attachment #2 - Certified Corporate Resolution.  
Attachment #3 – Iranian Energy Divestment Certification  
Attachment #4 – Certification on Violations  
Attachment #5 – Subcontractors List (in separate sealed envelope bearing the Bidder's name, name of Contract, and title "Subcontractors List").

## BID SECURITY

Enclosed with this Bid is bid security in the amount of five percent of the Base Bid.

## EXECUTION OF CONTRACT

If written notice of the acceptance of this Bid is transmitted to the undersigned within 45 days following the Bid opening, the undersigned will, within 10 days following the Notice of Award, execute and transmit a Contract in the form as required by the Architect.

This Bid may be withdrawn at any time prior to the Bid opening.

## SIGNATURE

(	)	NAME OF BIDDER (Corporate Name)
(	)	
(	)	_____
(	)	Corporate Seal
(	)	SIGNATURE (Corporate Officer)
(	)	
(	)	_____
(	)	
(	)	DATE: _____



**BID FORM**  
**ATTACHMENT #1**

**GENERAL CONDITIONS TO BID**  
**NON-COLLUSIVE BIDDING CERTIFICATION**

No bid will be accepted that does not have this form completely executed.

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:

- (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 matter relating to such prices with any other bidder or any competitor;
- (b) 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 opening, directly or indirectly, to any other bidder or to any competitor;
- (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;
- (d) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf;
- (e) That attached hereto (if corporate bidder) is a certified copy of resolution authorizing the execution of this certified by the signature of this bid or proposal in behalf of the corporate bidder.

\_\_\_\_\_  
(Individual)

\_\_\_\_\_  
(Corporation)

Dated: \_\_\_\_\_ By \_\_\_\_\_  
(Signature of Officer)

**This Non-Collusive Bidding Certificate must be submitted with the bid.**



**BID FORM**  
**ATTACHMENT #2**

**CERTIFIED CORPORATE RESOLUTION**

RESOLVED THAT \_\_\_\_\_ be authorized to sign and submit the bid or proposal of this corporation for the following project:

\_\_\_\_\_  
\_\_\_\_\_

and to include in such bid or proposal the certificate as to non-collusion required by section one hundred three-d (103-d) of the general municipal law as to the act and deed of such corporation, and for any inaccuracies or mis-statements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution and adopted by

\_\_\_\_\_ at a meeting of its board of directors held on the  
\_\_\_\_\_ day of \_\_\_\_\_ 20\_\_ .

\_\_\_\_\_  
(Secretary)



**BID FORM**  
**ATTACHMENT #3**

**IRANIAN ENERGY DIVESTMENT CERTIFICATION**

**Pursuant to Section 103-g  
Of the New York State  
General Municipal Law**

- A. By submission of this bid/proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer 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 its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the New York State Finance Law.
- B. A Bid/Proposal shall not be considered for award, nor shall any award be made where the condition set forth in Paragraph A above has not been complied with; provided, however, that in any case the bidder/proposer cannot make the foregoing certification set forth in Paragraph A above, the bidder/proposer shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where Paragraph A above cannot be complied with, the Purchasing Unit to the political subdivision, public department, agency or official thereof to which the bid/proposal is made, or his designee, may award a bid/proposal, on a case by case business under the following circumstances:
1. The investment activities in Iran were made before April 12, 2012, the investment activities in Iran have not been expanded or renewed after April 12, 2012, and the Bidder/Proposer has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or
  2. The political subdivision makes a determination that the goods or services are necessary for the political subdivision to perform its functions and that, absent such an exemption, the political subdivision would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Company



**BID FORM**  
**ATTACHMENT #4**

**CERTIFICATION ON VIOLATIONS**

\_\_\_\_\_, a representative of \_\_\_\_\_, hereby swears to and certifies that, to the best of his or her knowledge and belief:

1. Neither \_\_\_\_\_, nor any substantially owned-affiliated entity of the Bidder (collectively the "Bidder"), has been found to be in violation of the Davis-Bacon Act pursuant to 40 U.S.C. 3144, the Copeland Act pursuant to 18 U.S.C. 874 and 40 U.S.C. 3145 or the Contract Work Hours and Safety Standards Act pursuant to 40 U.S.C. 332, or their New York State counterparts.

☐ True      ☐ False

If False is selected, information for questions 2 and 3 must be provided. If True is selected questions 2 and 3 are not applicable, continue to question 4.

2. If the Bidder has been found to be in violation of the Davis-Bacon Act, the Copeland Act, the Contract Work Hours and Safety Standards Act, or any of their New York State counterparts, state the name of the agency, the date of the violation, the nature of the violation and any consequence of the violation, including warnings, fines and debarments below.

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3. The Bidder is not currently under investigation by any local, state or federal government agency. If Bidder is under investigation, state the name of the agency, the date of the alleged violation and the nature of the alleged violation below.

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4. The Bidder's Dun & Bradstreet D-U-N-S number is \_\_\_\_\_.

5. I have authority to execute this certification, knowing it will be relied upon by the Owner of this Project.

\_\_\_\_\_  
Name Title

Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public



**BID FORM**  
**ATTACHMENT #5**

**SUBCONTRACTORS LIST**

In accordance with New York State law, list below names of each subcontractor for Plumbing, Mechanical and Electrical work whose figures have been used in preparing the Bid, and to whom subcontracts are expected to be awarded, should the Contract be awarded to the Bidder.

Include amount to be paid to each subcontractor.

Any changes to this list will require the approval of the Owner upon a showing of legitimate construction need for the change.

<b>Scope of Subcontractor's Work</b>	<b>Subcontractor Name</b>	<b>Dollar Amount of Subcontract</b>
General		
Mechanical		
Electrical		



NAME OF BIDDER \_\_\_\_\_

**PROPOSED PRODUCTS FORM****SUBMITTED BY THREE LOW BIDDERS WITHIN THREE DAYS FOLLOWING BID OPENING**

In accordance with Articles 4 and 6 of the Instructions to Bidders, list specified products and corresponding proposed equivalent products below. Include additional pages as necessary.

*Attach additional sheet explaining any aspect of the Contract Documents that cannot be complied with by the manufacturer or supplier of the proposed equivalent product.*

**Specified Product****Equivalent Product**

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_

Technical Section: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Specified Product: \_\_\_\_\_

Product

Designation: \_\_\_\_\_



NAME OF BIDDER \_\_\_\_\_

**PROPOSED SUBCONTRACTORS FORM****SUBMITTED BY THREE LOW BIDDERS**  
**WITHIN THREE DAYS FOLLOWING BID OPENING**

Review of proposed subcontractors shall be in accordance with Article 5.2 of the General Conditions.

**Instructions:**

1. List below name of each subcontractor whose figures have been used in preparing the Bid, and to whom a subcontract is expected to be awarded, upon Architect's review, should the Contract be awarded to the Bidder.
2. For each subcontractor, identify the Specification section(s) included in that subcontract.

<b><u>Subcontractor Name</u></b>	<b><u>Specification Section</u></b>



NAME OF BIDDER \_\_\_\_\_

**PROPOSED SCHEDULE OF VALUES FORM**SUBMITTED BY THREE LOW BIDDERS WITHIN THREE DAYS FOLLOWING BID OPENING

For the convenience of the Owner's preliminary analysis of the Bid, list the value of the Work included in the Base Bid sum for each building:

Plattekill Elementary School..... \$ \_\_\_\_\_

Total Base Bid..... \$ \_\_\_\_\_



NAME OF BIDDER \_\_\_\_\_

**BIDDER'S QUALIFICATIONS FORM****NOTARIZED AND SUBMITTED BY THREE LOW BIDDERS**  
**WITHIN THREE DAYS FOLLOWING BID OPENING**  
**UPON REQUEST BY ARCHITECT**

All questions must be answered and the data given must be clear and comprehensive. If necessary, questions may be answered on separate attached sheet.

1. Name of Bidder:
2. Permanent main office address:
3. When organized:
4. If a corporation, where incorporated:
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contracts on hand: (List these, showing amount of each contract and the appropriate anticipated dates of completion.)
7. General character of work performed by your company:
8. Have you ever failed to complete any work awarded to you?  
If so, where and why?
9. Have you ever defaulted on a contract?  
If so, where and why?
10. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed.
11. List your major equipment available for this Contract.
12. List your experience in work similar to this project.
13. List the background and experience of the principal members of your organization, including officers.
14. List the work to be performed by Subcontractors and summarize the dollar value of each Subcontract.
15. Credit available: \$
16. Give bank reference:









# AIA® Document A232® – 2019

## ***General Conditions of the Contract for Construction, Construction Manager as Adviser Edition***

### **for the following PROJECT:**

*(Name, and location or address)*

Reconstruction to  
Plattekill Elementary School  
Tt Project Number 17597-22002B

### **THE CONSTRUCTION MANAGER:**

*(Name, legal status, and address)*

Barone Construction Group Inc.  
23 New Paltz Road  
Highland, New York 12528

### **THE OWNER:**

*(Name, legal status, and address)*

Wallkill Central School District  
1500 Route 208  
Wallkill, New York 12589

### **THE ARCHITECT:**

*(Name, legal status, and address)*

Tetra Tech Engineers, Architects & Landscape Architects, P.C.  
d/b/a Tetra Tech Architects & Engineers  
Cornell Business & Technology Park  
10 Brown Road  
Ithaca, New York 14850

### **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.

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.



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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. The Contract Documents include the Notice to Bidders, Instructions to Bidders, sample forms, and the Contractor's bid..

**§ 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 the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their 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 other Contractors, and by the Owner's own forces and Separate Contractors.

**§ 1.1.5 Contractors.** Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

**§ 1.1.6 Separate Contractors.** Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

**§ 1.1.7 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.

**§ 1.1.8 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.

**§ 1.1.9 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.

**§ 1.1.10 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.

**§ 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 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 Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

*(Paragraph deleted)*

### **§ 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 thirty (30) days of the Contractor's written 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' written 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. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.



§ 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.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall furnish, upon written request, only, and as necessary to complete the work, 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 reasonably rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.6 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.

§ 2.3.7 The Owner shall furnish the Contractor <two (2)> copies of the Contract Documents, including one set to be used for the Project Record Drawings. The Contractor may purchase additional copies at the cost of reproduction, postage and handling.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

#### § 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 Five-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 review by the Construction Manager and prior approval of the Architect, and the Construction Manager or 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 Construction Manager's and Architect's and their respective consultants' 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 Construction Manager or Architect in their 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 carefully examined the Contract Documents and the site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the site, the specific conditions under which the Work is to be performed, and all matters which may in any way affect the Work or its performance. The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations, and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all local conditions and the Contract Documents are waived and will not be permitted.

**§ 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 2.3.5, 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 Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and 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 Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and 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 in writing 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.

**§ 3.2.4.1** The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and not responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested 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.

**§ 3.2.5** Where existing conditions are obscured or concealed from the Owner or Architect's view prior to the start of this Project's construction activities, portrayal of such conditions in the documents is based on reasonable implications



and assumptions. The Owner and Architect do not imply or guarantee to the Contractor in any way that such portrayals in the Documents are accurate or true.

**§ 3.2.5.1** Physical investigations and testing of existing conditions were not undertaken by the Architect, unless so indicated in the Contract Documents.

**§ 3.2.5.2** The Contractor may submit written requests for information to the Architect to help facilitate the Contractor's performance of the contract. Prior to submitting each request for information, the Contractor shall first carefully study and compare the Contract Documents, field conditions, other Owner provided information, Contractor prepared Coordination Drawings, and prior Project correspondence and documentation to determine that the information to be requested is not reasonably obtainable from such sources.

**§ 3.2.5.3** Each request for information shall be submitted to the Architect, in writing, with a copy to the Construction Manager. Each request for information shall identify the specific sources which were reviewed by the Contractor in an effort to determine the information requested, and a statement to the effect that the information being requested could not be determined from such sources.

**§ 3.2.5.4** The Contractor shall submit each request for information sufficiently in advance of the date by which such information is requested in order to allow the Architect sufficient time, in the Architect's professional judgment, to permit adequate review and response and to permit Contractor compliance with the latest construction schedule.

**§ 3.2.5.5** The Construction Manager shall maintain a log at the Project site that sequentially numbers and lists each request for information. This log shall contain the Drawings reference or Specification section to which the request pertains, the date of the request, to whom the request was made, by whom the request was made, the nature of the request, and the Architect's resolution thereof. This log shall be reviewed at each Project meeting and the status of the requests for information shall be made part of the minutes of such meetings.

**§ 3.2.5.6** The Contractor shall reimburse the Owner amounts charged to the Owner by the Architect or Construction Manager for responding to Contractor requests for information 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**

**§ 3.3.1** 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, the Construction Manager, and the 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. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager 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 the Project 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, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.2.1** After the Contract has been executed, the Owner and Architect will consider requests for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 01 of the Specifications). By making requests for substitutions, the Contractor:

- .1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;
- .3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that subsequently become apparent; and
- .4 shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

**§ 3.4.2.2** The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions for convenience after the period noted in Division 01 Section "Substitution Procedures" and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.

**§ 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, Construction Manager, 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. 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 Construction Manager or 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 or portions thereof provided by the Contractor, to the extent practicable, that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

**§ 3.6.1** The Owner is exempt from payment of Federal, State, local taxes, and from payment of sales and compensating use taxes of the State of New York and of cities and counties on all materials and supplies sold to the Owner pursuant to the provisions of this Contract. These taxes are not to be included in bids. This exemption does not, however, apply to tools, machinery, equipment, or other property leased by, or to the Contractor or a subcontractor; and the Contractor and its subcontractor shall be responsible for, and pay, any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property.



### **§ 3.7 Permits, Fees, Notices, and Compliance with Laws**

**§ 3.7.1** The Owner, through the Construction Manager, shall secure and pay for the building permit from the New York State Education Department. The Contractor shall secure and pay for all other permits, fees, licenses, and inspections by government agencies necessary for proper execution of and completion of the contract, which are legally required.

**§ 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.

**§ 3.7.2.1** The Contractor shall comply with all applicable New York State Department of Labor requirements, including the provision that every worker employed in performance of a public work contract shall be certified as having completed an OSHA 10-hour safety training course. The Contractor and Subcontractor shall be solely responsible for compliance with this requirement with respect to their employees. The Contractor's or Subcontractor's failure to comply with this requirement shall not transfer or in any way impose the responsibility for worker safety upon the Owner or the Architect.

**3.7.2.2** In accordance with New York State Labor Law Article 8, Section 220, subd. 3-a(a), the Contractor shall submit to the Owner within 30 days after issuance of Contractor's first payroll, and every 30 days thereafter, a transcript of the original payroll record, subscribed and affirmed as true under the penalties of perjury.

**§ 3.7.3** If the Contractor or Subcontractor performs Work which it knows or should have known was 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, Construction Manager, and the Architect in writing before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, 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, in consultation with the Construction Manager, 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, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either 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, Construction Manager, 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.

### **§ 3.8 Allowances**

**§ 3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents.

.1 Contingency Allowances shall cover the direct cost to the Contractor and Subcontractors for labor, materials and equipment, including delivery, unloading, storage, handling and installation. They do not include the Contractor's overhead and profit, including the costs of bonds, insurance, administration and supervision, which costs should be carried as part of the Contract Sum.

.2 The Architect shall create and process Allowance Access Authorizations for the Construction Manager and Owner's approval and execution in accordance with the Contract Documents.



**§ 3.8.2**

*(Paragraphs deleted)*

Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

*(Paragraph deleted)*

**§ 3.8.3** Refer to Division 01 Section "Allowances" for additional information.

**§ 3.9 Superintendent**

**§ 3.9.1** The Contractor shall employ and designate 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. The superintendent shall be in attendance at the project site full time throughout the work, including completion of the punch list. The superintendent must speak the English language clearly.

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager 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, Construction Manager, 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, and the Construction Manager's use in developing the Project schedule, 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. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

**§ 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 Construction Manager's and Architect's approval. The Architect and Construction Manager'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 Construction Manager and 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 participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

**§ 3.10.4** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.



### **§ 3.11 Documents and Samples at the Site**

The Contractor shall maintain and 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 in good order and condition. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager 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 and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are 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 Construction Manager or Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, 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 reviewed and 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 Construction Manager and 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 Construction Manager and 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 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, the Architect, and the Construction Manager 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. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 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 Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.12.11 The Contractor is required to provide all submittals for the Architect's review. All submittals are to be provided to the Architect by the Submittal deadlines noted in the Contract Documents. The Architect's review of Contractor's submittals will be limited to the time preceding the Submittal deadline and will consist of an examination of an initial submittal and 1 resubmittal[s]. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals, and for evaluation of submittals for which the initial submission is received after the Submittal deadlines.

### § 3.13 Use of Site

§ 3.13.1 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.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.13.3 The Contractor shall be responsible for enforcing **the Owner's security and access policies and procedures, the Owner's Code of Conduct, and** the following rules of conduct for its personnel and those of its subcontractors, sub-subcontractors, and suppliers at the Project site, and the Owner's Project Representative shall provide interpretations should a question arise if the rules of conduct are being adequately enforced by the Contractor:

- .1 No smoking or use of tobacco products.
- .2 No drinking of alcoholic beverages or use of controlled substances.
- .3 No working, or presence on site, under the influence of alcoholic beverages or controlled substances.
- .4 No use of indecent language or display of indecent images, publications or terms.
- .5 No use of radios or other entertainment devices.
- .6 No horseplay or dangerous behavior.
- .7 No firearms or other weapons.
- .8 No communication with staff or students.



§ 3.13.4 The Contractor shall require its personnel and those of its subcontractors, sub-subcontractors and suppliers to wear visible photo-identification badges acceptable to the Owner, at all times for identification and security purposes.

#### **§ 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, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, 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, or Construction Manager with the Owner's approval, 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, Construction Manager, 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, Construction Manager, 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, Architect, or Construction Manager. 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 through the Construction Manager.

#### **§ 3.18 Indemnification**

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Construction Manager, Architect, each of their consultant's, officers, board members, agents, and employees from and against any suits, claims, damages, losses, or expenses, including but not limited to attorneys' fees and litigation costs, arising out of or resulting from performance of the Work, provided that such suit, claim, damage, loss or expense is attributable to any bodily injury, sickness, disease, or death, or injury to or destruction of any tangible property, including loss of use resulting therefrom, but only to the extent caused in whole or in part by the act, omission, fault, breach of contract, breach of warranty or statutory violation of the Contractor, a subcontractor, or any person or entity directly or indirectly employed by them, or any person or entity for whose acts they may be liable or arises out of operation of law as a consequence of any act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of the above may be liable, regardless of whether any of them has been negligent.

§ 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 AND CONSTRUCTION MANAGER**

### **§ 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** The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

**§ 4.1.3** Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, Architect, and Contractor. Consent shall not be unreasonably withheld.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2.1** The Contractor shall reimburse the Owner for compensation paid to the Architect and/or Construction Manager for additional site visits made necessary by the fault, neglect, deficiencies in the work, or request of the Contractor.

**§ 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. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

**§ 4.2.3** The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

**§ 4.2.4** The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule.

**§ 4.2.5** The Construction Manager, except to the extent required by Section 4.2.4, and 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, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

**§ 4.2.6 Communications.** The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager 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 Construction Manager 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 other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

**§ 4.2.7** The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

**§ 4.2.8** The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other, and the Owner, in writing about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

**§ 4.2.9** Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

**§ 4.2.10** The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

**§ 4.2.11** 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. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

**§ 4.2.12** Review of the Contractor's submittals by the Construction Manager and Architect 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 Construction Manager and 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 Construction Manager and 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.

**§ 4.2.13** The Architect will prepare, will prepare Change Orders, Construction Change Directives and Allowance Change Authorizations..

**§ 4.2.14** The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the



Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

*(Paragraph deleted)*

§ 4.2.18 The Architect will interpret and decide matters concerning performance of the Contractor under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.19 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 so rendered in good faith.

§ 4.2.20 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request 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.

## **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 other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

§ 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, but no later than fourteen (14) days prior to the start of construction, shall notify furnish in writing to the Construction Manager, for review by the Owner, Construction Manager 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 Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed



person or entity or, (2) requires additional time for review. Failure of the Construction Manager 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, Construction Manager 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, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager 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, Construction Manager 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, but not limited to, the responsibility for safety of the Subcontractor's Work, and obligations to defend and indemnify the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager 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.

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 with Own Forces and to Award Other Contracts**

**§ 6.1.1** 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 the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

**§ 6.1.3** 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's own forces, Separate Contractors, Construction Manager and other 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's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect in writing and in detail of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and 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 or other Contractors' 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 Contractors or other Contractors that are not apparent.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, 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 delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces, Separate Contractors, or other Contractors.

**§ 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, Separate Contractors, or other Contractors as provided in Section 10.2.5.

**§ 6.2.5** The Owner, Separate Contractors, and other Contractors 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, other 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 Construction Manager, with notice to 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, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager 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.

**§ 7.1.4** The combined overhead and profit (for Contractor, subcontractors, suppliers, and contractors of a lower-tier) included in the total cost to the Owner for a change in the Work shall be as follows:

- .1 Maximum combined overhead and profit, 15 percent of the cost.
- .2 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4.
- .3 To facilitate checking of quotations for extras or credits, all proposals shall be accompanied by a complete itemization of costs including labor, materials, rental costs, and Subcontracts. Subcontracts shall be itemized also.
- .4 The additional bond charges for the total change order, two percent (2%) of the cost shall also apply to Deduct Change orders.

## **§ 7.2 Change Orders**

A Change Order is a written instrument prepared by the Architect and signed by the Owner, Construction Manager, Architect, and Contractor, 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, in coordination with the Construction Manager, and signed by the Owner, Construction Manager 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 Construction Manager 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 Construction Manager 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:

- .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 Construction Manager and 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 and equipment normally encumbered to perform the work, whether rented from the Contractor or others; and
- .4 Intentionally omitted.
- .5 Costs of supervision and field office personnel directly attributable to the change.
- .6 Overhead and profit mark-up shall include, but not be limited to, the following:
  - .1 home office expense;
  - .2 field office expense;
  - .3 supervision;
  - .4 project management & estimation; and
  - .5 small tools & equipment.

**§ 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 Construction Manager 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 Construction Manager and 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 Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The 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 Construction Manager and 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 Construction Manager shall 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 Construction Manager 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 Construction Manager 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.

§ 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. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 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, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (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, based on the recommendation of the Construction Manager, 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 The Owner shall not be liable to the Contractor and/or any subcontractor for claims or damages of any nature caused by or arising out of delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the claims procedure set forth herein. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to, those resulting from increased labor or material costs; directions given or not given by the Owner, Construction Manager or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or review of shop drawings and requests for instruction(s); or, on account of any delay, obstruction or hindrance for any cause whatsoever by the Owner, Construction Manager, Architect, or any other contractor on the project, whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefor shall be an extension of time, if appropriate.

**IT IS EMPHASIZED THAT NO MONETARY RECOVERY MAY BE OBTAINED BY THE CONTRACTOR FOR DELAY AGAINST THE OWNER, CONSTRUCTION MANAGER, OR ARCHITECT BASED ON ANY REASON AND THAT THE CONTRACTOR'S SOLE REMEDY, IF APPROPRIATE, IS ADDITIONAL TIME."**

## 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**

The Contractor shall submit a schedule of values to the Construction Manager, 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 Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or 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 fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager 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, Construction Manager or Architect require, such as copies of requisitions, and releases of waivers of lien 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 Construction Manager and Architect, but not yet included in Change Orders.

**§ 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.

**§ 9.3.1.3** Until Substantial Completion, the Owner shall pay ninety-five percent (95%) of the amount due to the Contractor on account of progress payments.

**§ 9.3.1.4** When the work or major portions thereof as contemplated by the terms of the Contract are substantially complete, the Contractor shall submit to the Construction Manager and Architect a requisition for payment of the remaining amount of the Contract balance. Upon receipt of such requisition, the Owner shall approve and promptly pay the remaining amount of the Contract less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgments against the Contractor, which have not been suitably discharged, as determined by the Architect in conjunction with the Construction Manager. 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.

**§ 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. The Owner shall have the right, at any time on reasonable notice to inspect materials and equipment which have been stored off the site in accordance with this paragraph.

**§ 9.3.2.1** Proof of insurance for items stored off site and copies of invoices are to be provided with Applications for Payment requesting payment for stored materials.



**§ 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** Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager 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 Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

**§ 9.4.2** Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

**§ 9.4.2.1** Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager 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 Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

**§ 9.4.3** The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager'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, or Contractors are, entitled to payment in the amount certified.

**§ 9.4.4** The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation 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, or Contractors are, entitled to payment in the amount certified.

**§ 9.4.5** The representations made pursuant to Sections 9.4.3 and 9.4.4 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 Construction Manager or Architect.



**§ 9.4.6** The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or 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 Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or 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 or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the 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;
- .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 or other 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;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 failure of Contractor to provide executed supplementary bid forms, performance and payment bonds or a current Certificate of Insurance.

**§ 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 or Construction Manager withholds certification for payment under Section 9.5.1, 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 Construction Manager, and both will reflect such payment on the next Certificate for Payment.

## **§ 9.6 Progress Payments**

**§ 9.6.1** After the Architect has issued a Certificate for Payment or Project 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 Construction Manager and 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 Construction Manager 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 Owner, Construction Manager and Architect 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, Construction Manager 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.

## § 9.7 Intentionally omitted.

## § 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 the Owner can occupy or utilize the Work for its intended use.

§ 9.8.1.1 No later than 14 days prior to the Contract-scheduled date of Substantial Completion, the Contractor shall issue a letter to the Architect and Construction Manager confirming their work is on schedule for Substantial Completion by the contract specified date. No later than seven days after Contract-scheduled date of Substantial Completion (including authorized adjustments), the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Absent the contractor letter confirming readiness of work, the Architect may elect to postpone the substantial completion inspection. If the Architect's inspection discloses any item 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 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 the actual date of Substantial Completion.

§ 9.8.1.2 The Architect 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 reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

§ 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 notify the Construction Manager, and the Contractor and



Construction Manager shall jointly 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 punchlist, the Architect, assisted by the Construction Manager, 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 punchlist, 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, assisted by the Construction Manager, to determine Substantial Completion.

**§ 9.8.4** When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, 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.

**§ 9.8.6** In the event the Contractor does not achieve final completion within sixty (60) days after the date of Substantial Completion, allowing for any approved extensions of the Contract time, Contractor shall not be entitled to any further payment and Contractor agrees that such failure to complete the work within the time set forth above shall constitute a waiver of all claims by the Contractor to any money that may be due. This provision shall not operate as a waiver by the Owner of any claims or remedies of any nature against the Contractor arising out of the Contract.

## **§ 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 and Construction Manager shall jointly 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 after consultation with the Construction Manager.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Construction Manager, 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.

**§ 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 completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final



Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their 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 Construction Manager's and Architect's final Certificate for Payment or Project 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 through the Construction Manager (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 Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and 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 through the Construction Manager 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.

**§ 9.10.6** If the Contractor is responsible for delays in the final completion and closeout beyond the contract specified time, the Owner shall be entitled to reimbursement from the Contractor for amounts paid by the Owner to subsequently extend the Electronic Submittal System (Submittal Exchange).



## **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. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

### **§ 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

- .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;
- .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; and
- .4 construction or operations by the Owner, Separate Contractors, or other Contractors.

**§ 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, 10.2.1.3 and 10.2.1.4 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, 10.2.1.3 and 10.2.1.4. 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, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any 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, Construction Manager 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, written 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

§ 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, Construction Manager and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's written 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, Construction Manager 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, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager 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 Intentionally omitted.

§ 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.

*(Paragraph deleted)*

### § 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, Construction Manager and Construction Manager's consultants, and the 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.

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed, including private entities performing Work at the site and exempt from the coverage on account of the number of employees or occupation, such entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;



- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees or persons or entities excluded by statute from the requirements of Clause 11.1.1.1, but required by the Clause;
- .3 Claims for damages because of bodily injury, occupational sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage; which are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations;
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 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** The limits of liability of the insurance required above shall be as follows:

- .1 **Commercial General Liability (CGL)**  
**Limits of Insurance not less than:**  
**\$1,000,000 Each Occurrence**  
**\$1,000,000 Personal & Advertising Injury**  
**\$2,000,000 General Aggregate per project/location**  
**\$2,000,000 Products/Completed Operations Aggregate**  
**\$100,000 Fire Damage Legal Liability**  
**\$10,000 Medical Payments**
  - a. The CGL coverage shall contain a General Aggregate Limit, such General Aggregate shall apply separately to each project.
  - b. CGL coverage shall be written on ISO Occurrence form CG 00 01 1093 or a substitute form providing equivalent coverage and shall cover liability arising from premises, operations, independent contractors, products-completed operations, and personal and advertising injury.
  - c. Owner, Architect and their consultants, Owner's Representative, and all other parties required by Owner, shall be included as additional insureds on the Commercial General Liability, using ISO Additional Insureds Endorsement CG 20 10 11 85 or CG 2010 (10/93) and CG 20 3 7 (10/01) or CG2033 (10/01) and CG2037 (10/01) or an endorsement providing equivalent coverage to the additional insureds. This insurance for the additional insureds shall be as broad as the coverage provided for the named insured subcontractor. It shall apply as Primary and non-contributing Insurance before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insured.
  - d. Attached to each certificate of insurance shall be a copy of the additional Insured Endorsement address in c.) above.
  - e. Contractor shall maintain Commercial General Liability coverage for itself and all additional insureds for the duration of the project and maintain Completed Operations coverage for itself and each additional insured for least 3 years after completion of the Work.
- .2 **Automotive Liability**



- a. Business Auto Liability with limits of at least \$1,000,000 each accident for bodily injury and/or property damage.
  - b. Business Auto coverage must include coverage for liability arising out of all owned, leased, hired and non-owned automobiles.
  - c. Owner and other parties required by the Owner, shall be included as additional insured on the auto policy on a primary and non-contributing basis.
- .3 Commercial Umbrella**
- a. Umbrella limits must be at least a minimum of \$5,000,000 or available policy limits if policy limits are higher.
  - b. Umbrella coverage must include as additional insureds all entities that are additional insureds on the Commercial General Liability Policy.
  - c. Umbrella coverage for such additional insureds shall apply as primary and non-contributing before any other insurance or self-insurance, including other than the Commercial General Liability, Auto Liability and Employers Liability coverages maintained by the Contractor.
  - d. Attached to each certificate of insurance shall be a copy of the Additional Insured Endorsement addressed in b.) and c.) above.
- .4 Workers Compensation and Employers Liability**
- a. Employers Liability Insurance limits of at least \$500,000, each accident, \$500,000 for bodily injury by accident and \$500,000 each employee for injury by disease.
  - b. Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy.
  - c. Where applicable, the Maritime Coverage Endorsement shall be attached to the policy.
- .5 Environmental Impairment Liability (Pollution Insurance) (EIL)**
- a. Contractors involved with the removal and/or abatement of pollutants (including but not limited to asbestos abatement contractors, lead abatement contractors, roofing contractors, tank removal contractors) are required to maintain a minimum of \$1,000,000 EIL coverage.
  - b. Owner and all other parties required by the Owner, shall be included as additional insured on the EIL policy on a primary and non-contributing basis.
- .6 Owners Contractors Protective Liability Insurance:** A separate policy of insurance naming the Owner, Architect and the Construction Manager as the insureds. The original policy shall be submitted for retention by Owner. A copy shall be sent to the Architect through the Owner's Representative. Said separate policy shall be in the amounts of One Million Dollars (\$1,000,000) per occurrence, and in the aggregate of two million dollars (\$2,000,000) for bodily injury and property damage and shall provide coverage for the Owner, Architect and Owner's Representative, their agents, officers and employees, with respect to said work. Said policy shall provide that the coverage afforded thereby shall be primary coverage to the full limits of liability stated in the declarations, and if said Owner, Architect or Owner's Representative, their officers and employees have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only. This coverage shall last for the duration of the contract.
- .7** Prior to commencing the Work, the Owner shall supply the Contractor and Owner's Representative with a certificate of insurance providing evidence of insurance coverage for the Contractor for Builder's Risk/Installation Floater "All Risk" insurance shall protect the Contractor, the Contractor's Subcontractors, the Architect and the Owner's Representative from losses resulting from, but not limited to, natural disasters, fire, extended coverage perils, vandalism, malicious mischief or collapse during the course of construction. The amount of such insurance shall be not less at any time than the total value of the Work in place, on site, in transit or in storage off site and the loss under such policies shall be made payable to the Owner and/or the Contractor or other insureds, as their respective interest may appear. The policy shall cover all property to be used in, or incidental to, the fabrication and/or erection and/or completion of the project. It shall include all materials, machinery, equipment and supplies intended to become part of such property and false work, temporary trestles and similar structures. It shall not include tools, Contractor's equipment and any other property not a part or destined to become part of the



project. The Owner should be advised of the amount, if any, of a deductible amount exceed \$5,000,000. The Contractor shall provide the Owner upon request with copies of any of the insurance policies required to be maintained pursuant to this Article.

.8 The amount of insurance contained in the aforementioned insurance coverages shall not be construed to be a limitation of the liability on the part of the Contractor or any of its subcontractors.

.9 At the Owner's request, the Contractor shall provide a copy of the declaration page of the liability and umbrella/excess policies with a list of endorsements and forms. There will be no coverage restrictions and/or exclusions involving the New York State Labor Law statutes or gravity related injuries.

.10 A fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of insurance. For any "Yes" answers on Items G through L on this Form— additional details must be provided in writing. Policy exclusions may not be accepted.

**§ 11.1.5 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 directly to the Owner, and separately to the Construction Manager, 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 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 both the Contractor and the Construction Manager, separately and 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 directly to the Contractor, and separately to the Construction Manager, 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 Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their



subcontractors, sub-subcontractors, agents, and employees; and (5) 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 Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, 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**

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, Architect, and Construction Manager 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 Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, 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 Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their 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 Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or 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 Construction Manager or 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 Construction Manager's and 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. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.

**§ 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, Separate Contractors, or other 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. The parties expressly agree that any claim, dispute or other controversy of any nature arising out of the Contract or performance of the Work shall be commenced and maintained in Supreme Court, Ulster County, or the United State District Court, Northern District of New York, if applicable.

**§ 13.1.2** The Contractor shall at all times observe and comply with all Federal and State Laws, and all Laws, Ordinances and Regulations of the Owner, in any manner affecting the work, and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the Work,



and the Contractor shall defend, indemnify and save harmless the Owner, Construction Manager and Architect and all their officers, agents or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation or order, whether by himself or by his employee or agents.

**§ 13.1.3** The Contractor specifically agrees as required by Labor Law, Sections 220 and 220-d, as amended that:

- .1 No laborer, workman or mechanic in the employ of the Contractor, subcontractor or other person doing contracting or contracting to do the whole or any part of the work contemplated by the Contract, shall be permitted or required to work more than eight hours in one calendar day or more than five days in one week, except in the emergencies set forth in the Labor Law.
- .2 The wages paid for a legal day's work shall not be less than the prevailing rate of wages as defined by law, and
- .3 The minimum hourly rate of wages to be paid shall not be less than that stated in the Specifications, and any re-determination of the prevailing rate of wages after the Contract is approved shall be deemed to be incorporated herein by reference as of the effective date of re-determination and shall form a part of this Contract. The Labor Law provides that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction of willfully paying less than:
  - a. the stipulated wage scale as provided in Labor Law, Section 220, Sub-division 3, as amended; or
  - b. the stipulated minimum hourly wage scale as provided in Labor Law, 220-d, as amended.

**§ 13.1.4** The Contractor specifically agrees as required by the provisions of Labor Law, Section 220-e, as amended that:

- .1 In hiring of employees for the performance of work under this Contract or any subcontract hereunder or for the manufacture, sale, or distribution of materials, equipment or supplies, hereunder, no Contractor or Subcontractor nor any person acting on behalf of such Contractor or Subcontractor, 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.
- .2 No Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee under this Contract on account of race, creed, color, disability, sex, or national origin.
- .3 There may be deducted from the amount payable to the Contractor by the Owner under this Contract, a penalty of fifty dollars (\$50) for each person for each calendar day during which such a person was discriminated against or intimidated in violation of the provisions of the Contract, and
- .4 The provisions of this section covering every Contract for or on behalf of the Owner, the State or a municipality for the manufacture or sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

**§ 13.1.5** During the performance of this Contract, the Contractor agrees as follows:

- .1 The Contractor will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
- .2 If directed to do so by the Owner or the State Commissioner of Human Rights, the Contractor will send to each labor union or representative of workers which with the Contractor has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commissioner of Human Rights, advising such labor union or representative of the Contractor's agreement under clauses (1) through (6) (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the Owner as part of the bid or negotiation of this Contract, the Contractor shall request such labor union or representative to furnish a written statement that such a labor union representative will not discriminate because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, or marital status, and that such labor union or representative will cooperate, within the limits of its legal contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses and that it consents and agrees that the recruitment, employment and the terms and conditions of employment under this Contract shall be in accordance with the purposes and provision of these non-discrimination 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 Owner and the State Commissioner of Human Rights of such failure or refusal.
- .3 If directed to do so by the Owner or the Commissioner of Human Rights, the Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commissioner of Human Rights setting forth the substance of provisions of clauses (1) and (2) and such provision of the State's law against discrimination as the State Commissioner of Human Rights shall determine.
  - .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 age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
  - .5 The Contractor will comply with the provisions of Sections 290-299 of the Executive Law, and with the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commissioner of Human Rights under these non-discrimination clauses and such section of the Executive Law, and will permit access to the Contractor's books, records, and accounts by the Owner, the State Commissioner of Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with the non-discrimination clauses and such sections of the Executive Law Civil Rights Law.
  - .6 This Contract may be forthwith cancelled, terminated or suspended, in whole or in part, by the Owner upon the basis of a finding made by the State Commissioner of Human Rights that the Contractor has not complied with the non-discrimination clauses, and that the Contractor may be declared ineligible for future contracts made by or on behalf of the Owner, the State or a public authority or agency of the State, until the Contractor satisfies the State Commissioner of Human Rights that the Contractor has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings may be made by the State Commissioner of the Human Rights after conciliation efforts by the Commissioner have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commissioner, notice thereof has been given to the Contractor to be heard publicly in accordance with the Executive Law. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law, and
  - .7 The Contractor will include the provisions of clauses .1 through .6 in every subcontract or purchase order in such a 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 action in enforcing such provisions of such subcontract or purchase order as the State Commissioner of Human Rights or the Owner may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved or is threatened with litigation with a subcontractor or vendor as a result of such directions by the State Commissioner of Human Rights or the Owner, the Contractor shall promptly so notify the Owner and the Attorney General requesting the Attorney General to intervene and protect the interests of the State of New York.

### **§ 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, Construction Manager, 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 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 Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and 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 Construction Manager, 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 Construction Manager and 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 Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and 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 Construction Manager's and 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 Construction Manager for transmittal to the Architect.

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or 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 to Contractor, including any interest, shall be consistent with this Agreement and in accordance with New York State General Municipal Law Section 106-b.

### § 13.6 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law.

### 13.7 Equal Opportunity

§ 13.7.1 The Contractor shall maintain policies of employment as follows:

.1 The Contractor and the Contractor's subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or natural origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in



conspicuous places, available to employees and applicants for employment, notice setting forth the policies of non-discrimination.

.2 The Contractor and the Contractor's subcontractors shall, in all solicitations or advertisement for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

### **§ 13.8 Wage Rates**

**§ 13.8.1** The Contractor shall comply with Prevailing Wage Rates issued and periodically updated, by the New York State Department of Labor, for the location and duration of the Project.

## **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 Construction Manager has not certified or 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, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

*(Paragraph deleted)*

**§ 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 under direct or indirect contract with the Contractor, 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 thirty (30) days' notice to the Owner with reasonable opportunity to cure, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work properly executed.

**§ 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 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 thirty (30) additional days' notice to the Owner, Construction Manager and 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 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 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise breaches a material provision of the Contract Documents.
- .5 breaches any warranty made by the Contractor under or pursuant to the Contract Documents.
- .6 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all of the requirements of the Contract Documents."



§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, 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. The costs of finishing the Work include, without limitations, all reasonable attorney's fees incurred by the Owner, additional Architect/Engineering and Construction Manager costs, insurance, additional interest because of any delay in completing 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 Construction Manager's and 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.

### § 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 the Contract Time may be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. 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 this Contract.

### § 14.4 Termination by the Owner for Convenience

§ 14.4.1 Notwithstanding any other provision to the contrary in this Agreement, the Owner reserves the right at any time and in its absolute discretion to terminate the services of the Contractor and/or the Work for the Owner's convenience and without cause by giving written notice to the Contractor. This termination for the convenience of the Owner provision allows and authorizes the Owner to terminate this Agreement at any time and for any reason whatsoever. This right may be exercised by the Owner in its complete discretion.

§ 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.

§ 14.4.3 In the case of such termination for the Owner's convenience, the Contractor shall be entitled to, and the Owner shall reimburse the Contractor for, an equitable portion of the Contractor's fee based on the portion of the Work properly completed before the effective date of termination. Contractor's entitlement to payment for all such work shall be predicated on its performance of such work in accordance with the Contract Documents as certified by the Architect and Construction Manager. Contractor shall be entitled to no other payment and waives any claim for damages.

## 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.

#### **§ 15.1.2.1 Claims by the Contractor must be made by written notice in accordance with the following procedures.**

- .1 the Contractor may submit a claim concerning a matter properly noticed in accordance with the time requirements of this Contract set forth in paragraph 15.1.2 and elsewhere;
- .2 failure by the Contractor to furnish the required claim documentation within the time set forth above shall constitute waiver of the Contractor's right to compensation for such claim.
- .3 Contractor shall furnish three (3) certified copies of the required claim documentation. The claim documentation shall be complete when furnished. The evaluation of the Contractor's claim will be based, among other things, upon the Owner's Project Records and the Contractor's furnished claim documentation
- .4 claim documentation shall conform to Generally Accepted Accounting Principles and shall be in the following format:
  - a. general introduction;
  - b. general background discussion
  - c. issues
    - i. index of issues (listed numerically);
    - ii. for each issue:
      - (1) background
      - (2) chronology
      - (3) Contractor's position (reason for Owner's potential liability)
      - (4) supporting documentation of merit or entitlement
      - (5) supporting documentation of damages
      - (6) begin each issue on a new page
  - d. all critical path method schedules (as-planned, monthly updates, schedule revisions and as-built, along with computer disks of all schedules related to the claim;
  - e. productivity exhibits (if appropriate); and
  - f. summary of issues and damages.
- .5 supporting documentation of merit for each issue shall be cited by reference, photocopies or explanation. Supporting documentation may include, but shall not be limited to General Conditions, General Requirements, technical specifications, drawings, correspondence, conference notes, shop drawings and submittals, shop drawing logs, survey books, inspection reports, delivery schedules, test reports, daily reports, subcontracts, fragmentary CPM schedules or time impact analyses, photographs, technical reports, requests for information, field instructions and all other related records necessary to support the Contractor's claim.
- .6 supporting documentation of damages for each issue shall be cited, photocopied or explained. Supporting documentation may include, but shall not be limited to, any or all documents related to the preparation and submission of the bid; certified, detailed labor records including labor distribution reports; material and equipment procurement records; construction equipment ownership, cost records or rental records; subcontractor or vendor files and cost records; service cost records; purchase orders; invoices; Project as-planned and as-built cost records; general ledger records; variance reports; accounting adjustment records, and any other accounting material necessary to support the Contractor's claims.
- .7 each copy of the claim documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of these Contract Documents.

### **§ 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 Construction Manager and 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 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. 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.

§ 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** If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Architect, the Architect will render to the parties the Architect's written recommendation relative to the Claim, including any recommended change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

**§ 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 of receipt thereof, then both parties waive their rights to mediate.

**§ 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** Intentionally omitted.

**§ 15.3.2** The parties may 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. Mediation shall proceed in advance of binding dispute resolution 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.

*(Paragraphs deleted)*



# Additions and Deletions Report for AIA® Document A232® – 2019

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## PAGE 1

Reconstruction to  
Plattekill Elementary School  
Tt Project Number 17597-22002B

...

Barone Construction Group Inc.  
23 New Paltz Road  
Highland, New York 12528

...

Wallkill Central School District  
1500 Route 208  
Wallkill, New York 12589

...

*(Name, legal status, and address)*

Tetra Tech Engineers, Architects & Landscape Architects, P.C.  
d/b/a Tetra Tech Architects & Engineers  
Cornell Business & Technology Park  
10 Brown Road  
Ithaca, New York 14850

## PAGE 3

**§ 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. The Contract Documents include the Notice to Bidders, Instructions to Bidders, sample forms, and the Contractor's bid..

## PAGE 5

~~**§ 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.

...

**§ 2.2.2** 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~~ thirty (30) days of the Contractor's written 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.

...

**§ 2.2.4** 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' written 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.

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**§ 2.3.4** If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect ~~to whom the Contractor has no reasonable objection~~ and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

**§ 2.3.5** The Owner shall ~~furnish~~ furnish, upon written request, only, and as necessary to complete the work, 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 reasonably rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

...

**§ 2.3.7** ~~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. The Owner shall furnish the Contractor <two (2)> copies of the Contract Documents, including one set to be used for the Project Record Drawings. The Contractor may purchase additional copies at the cost of reproduction, postage and handling.~~

...

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ~~ten-day~~ Five-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 review by the Construction Manager and prior approval of the Architect, and the Construction Manager or 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 Construction Manager's and Architect's and their respective consultants'



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.

**PAGE 7**

**§ 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~~ carefully examined the Contract Documents and the site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the site, the specific conditions under which the Work is to be performed, ~~and correlated personal observations with requirements of the Contract Documents and all matters which may in any way affect the Work or its performance.~~ The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations, and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all local conditions and the Contract Documents are waived and will not be permitted.

...

**§ 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 in writing 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.

**§ 3.2.4.1** The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and not responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested 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.

**§ 3.2.5** Where existing conditions are obscured or concealed from the Owner or Architect's view prior to the start of this Project's construction activities, portrayal of such conditions in the documents is based on reasonable implications and assumptions. The Owner and Architect do not imply or guarantee to the Contractor in any way that such portrayals in the Documents are accurate or true.

**§ 3.2.5.1** Physical investigations and testing of existing conditions were not undertaken by the Architect, unless so indicated in the Contract Documents.

**§3.2.5.2** The Contractor may submit written requests for information to the Architect to help facilitate the Contractor's performance of the contract. Prior to submitting each request for information, the Contractor shall first carefully study and compare the Contract Documents, field conditions, other Owner provided information, Contractor prepared Coordination Drawings, and prior Project correspondence and documentation to determine that the information to be requested is not reasonably obtainable from such sources.

**§ 3.2.5.3** Each request for information shall be submitted to the Architect, in writing, with a copy to the Construction Manager. Each request for information shall identify the specific sources which were reviewed by the Contractor in an effort to determine the information requested, and a statement to the effect that the information being requested could not be determined from such sources.

**§ 3.2.5.4** The Contractor shall submit each request for information sufficiently in advance of the date by which such information is requested in order to allow the Architect sufficient time, in the Architect's professional judgment, to permit adequate review and response and to permit Contractor compliance with the latest construction schedule.



§ 3.2.5.5 The Construction Manager shall maintain a log at the Project site that sequentially numbers and lists each request for information. This log shall contain the Drawings reference or Specification section to which the request pertains, the date of the request, to whom the request was made, by whom the request was made, the nature of the request, and the Architect's resolution thereof. This log shall be reviewed at each Project meeting and the status of the requests for information shall be made part of the minutes of such meetings.

§ 3.2.5.6 The Contractor shall reimburse the Owner amounts charged to the Owner by the Architect or Construction Manager for responding to Contractor requests for information 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.

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§ 3.4.2.1 After the Contract has been executed, the Owner and Architect will consider requests for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 01 of the Specifications). By making requests for substitutions, the Contractor:

.1 represents that it has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;

.2 represents that it will provide the same warranty for the substitution as it would have provided for the product specified;

.3 certifies that the cost data presented is complete and includes all related costs for the substituted product and for Work that must be changed as a result of the substitution, except for the Architect's redesign costs, and waives all claims for additional costs related to the substitution that subsequently become apparent; and

.4 shall coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.2.2 The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Architect for reviewing the Contractor's proposed substitutions for convenience after the period noted in Division 01 Section "Substitution Procedures" and making agreed-upon changes in the Drawings and Specifications resulting from such substitutions.

...

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, 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. defects. 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 Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

...

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor-Contractor, to the extent practicable, that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 The Owner is exempt from payment of Federal, State, local taxes, and from payment of sales and compensating use taxes of the State of New York and of cities and counties on all materials and supplies sold to the Owner pursuant to the provisions of this Contract. These taxes are not to be included in bids. This exemption does not, however, apply to tools, machinery, equipment, or other property leased by, or to the Contractor or a subcontractor; and the Contractor and its subcontractor shall be responsible for, and pay, any and all applicable



taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property.

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**§ 3.7.1** ~~Unless otherwise provided in the Contract Documents, the Owner, assisted by The Owner, through the Construction Manager, shall secure and pay for the building permit.~~ permit from the New York State Education Department. The Contractor shall secure and pay for all 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. ~~of and completion of the contract, which are legally required.~~

...

**§ 3.7.2.1** The Contractor shall comply with all applicable New York State Department of Labor requirements, including the provision that every worker employed in performance of a public work contract shall be certified as having completed an OSHA 10-hour safety training course. The Contractor and Subcontractor shall be solely responsible for compliance with this requirement with respect to their employees. The Contractor's or Subcontractor's failure to comply with this requirement shall not transfer or in any way impose the responsible for worker safety upon the Owner or the Architect.

**3.7.2.2** In accordance with New York State Labor Law Article 8, Section 220, subd. 3-a(a), the Contractor shall submit to the Owner within 30 days after issuance of Contractor's first payroll, and every 30 days thereafter, a transcript of the original payroll record, subscribed and affirmed as true under the penalties of perjury.

**§ 3.7.3** ~~If the Contractor performs Work knowing it to be or Subcontractor performs Work which it knows or should have known was~~ 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, Construction Manager, and the Architect in writing before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, 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, in consultation with the Construction Manager, 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, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

...

**§ 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.~~

.1 Contingency Allowances shall cover the direct cost to the Contractor and Subcontractors for labor, materials and equipment, including delivery, unloading, storage, handling and installation. They do not include the Contractor's overhead and profit, including the costs of bonds, insurance, administration and supervision, which costs should be carried as part of the Contract Sum.

.2 The Architect shall create and process Allowance Access Authorizations for the Construction Manager and Owner's approval and execution in accordance with the Contract Documents.

**§ 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. Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.~~

~~§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.~~

~~§ 3.8.3 Refer to Division 01 Section "Allowances" for additional information.~~

~~§ 3.9.1 The Contractor shall employ and designate 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. The superintendent shall be in attendance at the project site full time throughout the work, including completion of the punch list. The superintendent must speak the English language clearly.~~

#### **PAGE 12**

The Contractor shall maintain and 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~~ submittals in good order and condition. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

#### **PAGE 13**

~~§ 3.12.11 The Contractor is required to provide all submittals for the Architect's review. All submittals are to be provided to the Architect by the Submittal deadlines noted in the Contract Documents. The Architect's review of Contractor's submittals will be limited to the time preceding the Submittal deadline and will consist of an examination of an initial submittal and 1 resubmittal[s]. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals, and for evaluation of submittals for which the initial submission is received after the Submittal deadlines.~~

...

~~§ 3.13.3 The Contractor shall be responsible for enforcing **the Owner's security and access policies and procedures, the Owner's Code of Conduct**, and the following rules of conduct for its personnel and those of its subcontractors, sub-subcontractors, and suppliers at the Project site, and the Owner's Project Representative shall provide interpretations should a question arise if the rules of conduct are being adequately enforced by the Contractor:~~

- ~~.1 No smoking or use of tobacco products.~~
- ~~.2 No drinking of alcoholic beverages or use of controlled substances.~~
- ~~.3 No working, or presence on site, under the influence of alcoholic beverages or controlled substances.~~
- ~~.4 No use of indecent language or display of indecent images, publications or terms.~~
- ~~.5 No use of radios or other entertainment devices.~~
- ~~.6 No horseplay or dangerous behavior.~~
- ~~.7 No firearms or other weapons.~~
- ~~.8 No communication with staff or students.~~

~~§ 3.13.4 The Contractor shall require its personnel and those of its subcontractors, sub-subcontractors and suppliers to wear visible photo-identification badges acceptable to the Owner, at all times for identification and security purposes.~~



§ 3.18.1 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and each of their consultant's, officers, board members, agents, and employees from and against any suits, claims, damages, losses, or expenses, including but not limited to attorneys' fees, fees and litigation costs, arising out of or resulting from performance of the Work, provided that such suit, claim, damage, loss, loss or expense is attributable to any bodily injury, sickness, disease-disease, or death, or to injury to or destruction of tangible property (other than the Work itself), any tangible property, including loss of use resulting therefrom, but only to the extent caused by the negligent acts or omissions of the Contractor, a in whole or in part by the act, omission, fault, breach of contract, breach of warranty or statutory violation of the Contractor, a subcontractor, or any person or entity directly or indirectly employed by them, or any person or entity for whose acts they may be liable or arises out of operation of law as a consequence of any act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts they-any of the above 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.any of them has been negligent.

§ 4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect and/or Construction Manager for additional site visits made necessary by the fault, neglect, deficiencies in the work, or request of the Contractor.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other-other, and the Owner, in writing about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

...

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives-Architect will prepare, will prepare Change Orders, Construction Change Directives and Allowance Change Authorizations..

§ 4.2.17 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 Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.18 The Architect will interpret and decide matters concerning performance of the Contractor under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

...

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, but no later than fourteen (14) days prior to the start of construction, shall notify furnish in writing to the



Construction Manager, for review by the Owner, Construction Manager 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 Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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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~~ including, but not limited to, the responsibility for safety of the Subcontractor's Work, ~~that and obligations to defend and indemnify~~ the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager 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.

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**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect in writing and in detail of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and 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 or other Contractors' 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 Contractors or other Contractors that are not apparent.

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**§ 7.1.4** The combined overhead and profit (for Contractor, subcontractors, suppliers, and contractors of a lower-tier) included in the total cost to the Owner for a change in the Work shall be as follows:

.1 Maximum combined overhead and profit, 15 percent of the cost.

.2 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4.

.3 To facilitate checking of quotations for extras or credits, all proposals shall be accompanied by a complete itemization of costs including labor, materials, rental costs, and Subcontracts. Subcontracts shall be itemized also.

.4 The additional bond charges for the total change order, two percent (2%) of the cost shall also apply to Deduct Change orders.

A Change Order is a written instrument prepared by the ~~Construction Manager Architect~~ and signed by the Owner, Construction Manager,

...



§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect, in coordination with the Construction Manager, and signed by the Owner, Construction Manager 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.

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- .3 Rental costs of machinery and equipment, exclusive of hand tools, ~~tools and equipment normally encumbered to perform the work, whether rented from the Contractor or others; and~~
  - .4 ~~Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and~~ Intentionally omitted.
  - .5 Costs of supervision and field office personnel directly attributable to the change.
- .6 Overhead and profit mark-up shall include, but not be limited to, the following:
- .1 home office expense;
  - .2 field office expense;
  - .3 supervision;
  - .4 project management & estimation; and
  - .5 small tools & equipment.

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§ 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. The date of commencement of the Work shall not be changed by the effective date of such insurance.

...

§ 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. The Owner shall not be liable to the Contractor and/or any subcontractor for claims or damages of any nature caused by or arising out of delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the claims procedure set forth herein. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to, those resulting from increased labor or material costs; directions given or not given by the Owner, Construction Manager or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or review of shop drawings and requests for instruction(s); or, on account of any delay, obstruction or hindrance for any cause whatsoever by the Owner, Construction Manager, Architect, or any other contractor on the project, whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefor shall be an extension of time, if appropriate.~~

**IT IS EMPHASIZED THAT NO MONETARY RECOVERY MAY BE OBTAINED BY THE CONTRACTOR FOR DELAY AGAINST THE OWNER, CONSTRUCTION MANAGER, OR ARCHITECT BASED ON ANY REASON AND THAT THE CONTRACTOR'S SOLE REMEDY, IF APPROPRIATE, IS ADDITIONAL TIME."**

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~~Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Construction Manager, 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 Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.~~



...

§ 9.3.1.3 Until Substantial Completion, the Owner shall pay ninety-five percent (95%) of the amount due to the Contractor on account of progress payments.

§ 9.3.1.4 When the work or major portions thereof as contemplated by the terms of the Contract are substantially complete, the Contractor shall submit to the Construction Manager and Architect a requisition for payment of the remaining amount of the Contract balance. Upon receipt of such requisition, the Owner shall approve and promptly pay the remaining amount of the Contract less two times the value of any remaining items to be completed and an amount necessary to satisfy any claims, liens or judgments against the Contractor, which have not been suitably discharged, as determined by the Architect in conjunction with the Construction Manager. 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.

§ 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. The Owner shall have the right, at any time on reasonable notice to inspect materials and equipment which have been stored off the site in accordance with this paragraph.

§ 9.3.2.1 Proof of insurance for items stored off site and copies of invoices are to be provided with Applications for Payment requesting payment for stored materials.

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- .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; or
- .8 failure of Contractor to provide executed supplementary bid forms, performance and payment bonds or a current Certificate of Insurance.

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#### § 9.7 Failure of Payment

~~If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's 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 Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager 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.~~Intentionally omitted.

...

§ 9.8.1.1 No later than 14 days prior to the Contract-scheduled date of Substantial Completion, the Contractor shall issue a letter to the Architect and Construction Manager confirming their work is on schedule for Substantial Completion by the contract specified date. No later than seven days after Contract-scheduled date of Substantial Completion (including authorized adjustments), the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Absent the contractor letter confirming readiness of work, the Architect may elect to postpone the substantial completion inspection. If the Architect's inspection discloses any item 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 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 the



actual date of Substantial Completion.

§ 9.8.1.2 The Architect 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 reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

§ 9.8.3 Upon receipt of the list, Contractor's punchlist, the Architect, assisted by the Construction Manager, 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 list, Contractor's punchlist, 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, assisted by the Construction Manager, to determine Substantial Completion.

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§ 9.8.6 In the event the Contractor does not achieve final completion within sixty (60) days after the date of Substantial Completion, allowing for any approved extensions of the Contract time, Contractor shall not be entitled to any further payment and Contractor agrees that such failure to complete the work within the time set forth above shall constitute a waiver of all claims by the Contractor to any money that may be due. This provision shall not operate as a waiver by the Owner of any claims or remedies of any nature against the Contractor arising out of the Contract.

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§ 9.10.6 If the Contractor is responsible for delays in the final completion and closeout beyond the contract specified time, the Owner shall be entitled to reimbursement from the Contractor for amounts paid by the Owner to subsequently extend the Electronic Submittal System (Submittal Exchange).

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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, written 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.

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§ 10.3.2 Upon receipt of the Contractor's written 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, Construction Manager 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, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager 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, Construction Manager, Architect, their 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. Intentionally omitted.

...

**§ 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.

...

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed, including private entities performing Work at the site and exempt from the coverage on account of the number of employees or occupation, such entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees or persons or entities excluded by statute from the requirements of Clause 11.1.1.1, but required by the Clause;
- .3 Claims for damages because of bodily injury, occupational sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage; which are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations;
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

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**§ 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 directly to the Owner, and separately to the Construction Manager, 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 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. The limits of liability of the insurance required above shall be as follows:

- .1 Commercial General Liability (CGL)
  - Limits of Insurance not less than:
    - \$1,000,000 Each Occurrence
    - \$1,000,000 Personal & Advertising Injury
    - \$2,000,000 General Aggregate per project/location
    - \$2,000,000 Products/Completed Operations Aggregate
    - \$100,000 Fire Damage Legal Liability
    - \$10,000 Medical Payments
  - a. The CGL coverage shall contain a General Aggregate Limit, such General Aggregate shall apply separately to each project.
  - b. CGL coverage shall be written on ISO Occurrence form CG 00 01 1093 or a substitute form providing equivalent coverage and shall cover liability arising from premises,



- operations, independent contractors, products-completed operations, and personal and advertising injury.
- c. Owner, Architect and their consultants, Owner's Representative, and all other parties required by Owner, shall be included as additional insureds on the Commercial General Liability, using ISO Additional Insureds Endorsement CG 20 10 11 85 or CG 2010 (10/93) and CG 20 3 7 (10/01) or CG2033 (10/01) and CG2037 (10/01) or an endorsement providing equivalent coverage to the additional insureds. This insurance for the additional insureds shall be as broad as the coverage provided for the named insured subcontractor. It shall apply as Primary and non-contributing Insurance before any other insurance or self-insurance, including any deductible, maintained by, or provided to, the additional insured.
- d. Attached to each certificate of insurance shall be a copy of the additional Insured Endorsement address in c.) above.
- e. Contractor shall maintain Commercial General Liability coverage for itself and all additional insureds for the duration of the project and maintain Completed Operations coverage for itself and each additional insured for least 3 years after completion of the Work.
- .2** Automotive Liability
- a. Business Auto Liability with limits of at least \$1,000,000 each accident for bodily injury and/or property damage.
- b. Business Auto coverage must include coverage for liability arising out of all owned, leased, hired and non-owned automobiles.
- c. Owner and other parties required by the Owner, shall be included as additional insured on the auto policy on a primary and non-contributing basis.
- .3** Commercial Umbrella
- a. Umbrella limits must be at least a minimum of \$5,000,000 or available policy limits if policy limits are higher.
- b. Umbrella coverage must include as additional insureds all entities that are additional insureds all entities that are additional insureds on the Commercial General Liability Policy.
- c. Umbrella coverage for such additional insureds shall apply as primary and non-contributing before any other insurance or self-insurance, including other than the Commercial General Liability, Auto Liability and Employers Liability coverages maintained by the Contractor.
- d. Attached to each certificate of insurance shall be a copy of the Additional Insured Endorsement addressed in b.) and c.) above.
- .4** Workers Compensation and Employers Liability
- a. Employers Liability Insurance limits of at least \$500,000, each accident, \$500,000 for bodily injury by accident and \$500,000 each employee for injury by disease.
- b. Where applicable, U.S. Longshore and Harborworkers Compensation Act Endorsement shall be attached to the policy.
- c. Where applicable, the Maritime Coverage Endorsement shall be attached to the policy.
- .5** Environmental Impairment Liability (Pollution Insurance) (EIL)
- a. Contractors involved with the removal and/or abatement of pollutants (including but not limited to asbestos abatement contractors, lead abatement contractors, roofing contractors, tank removal contractors) are required to maintain a minimum of \$1,000,000 EIL coverage.
- b. Owner and all other parties required by the Owner, shall be included as additional insured on the EIL policy on a primary and non-contributing basis.
- .6** Owners Contractors Protective Liability Insurance: A separate policy of insurance naming the Owner, Architect and the Construction Manager as the insureds. The original policy shall be submitted for retention by Owner. A copy shall be sent to the Architect through the Owner's Representative. Said separate policy shall be in the amounts of One Million Dollars (\$1,000,000) per occurrence, and in the aggregate of two million dollars (\$2,000,000) for bodily injury and property damage and shall provide coverage for the Owner, Architect and Owner's Representative, their agents, officers and employees, with respect to said work. Said policy shall provide that the



coverage afforded thereby shall be primary coverage to the full limits of liability stated in the declarations, and if said Owner, Architect or Owner's Representative, their officers and employees have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only. This coverage shall last for the duration of the contract.

.7 Prior to commencing the Work, the Owner shall supply the Contractor and Owner's Representative with a certificate of insurance providing evidence of insurance coverage for the Contractor for Builder's Risk/Installation Floater "All Risk" insurance shall protect the Contractor, the Contractor's Subcontractors, the Architect and the Owner's Representative from losses resulting from, but not limited to, natural disasters, fire, extended coverage perils, vandalism, malicious mischief or collapse during the course of construction. The amount of such insurance shall be not less at any time than the total value of the Work in place, on site, in transit or in storage off site and the loss under such policies shall be made payable to the Owner and/or the Contractor or other insureds, as their respective interest may appear. The policy shall cover all property to be used in, or incidental to, the fabrication and/or erection and/or completion of the project. It shall include all materials, machinery, equipment and supplies intended to become part of such property and false work, temporary trestles and similar structures. It shall not include tools, Contractor's equipment and any other property not a part or destined to become part of the project. The Owner should be advised of the amount, if any, of a deductible amount exceed \$5,000,000. The Contractor shall provide the Owner upon request with copies of any of the insurance policies required to be maintained pursuant to this Article.

.8 The amount of insurance contained in the aforementioned insurance coverages shall not be construed to be a limitation of the liability on the part of the Contractor or any of its subcontractors.

.9 At the Owner's request, the Contractor shall provide a copy of the declaration page of the liability and umbrella/excess policies with a list of endorsements and forms. There will be no coverage restrictions and/or exclusions involving the New York State Labor Law statutes or gravity related injuries.

.10 A fully completed New York Construction Certificate of Liability Insurance Addendum (ACORD 855 2014/15) must be included with the certificates of insurance. For any "Yes" answers on Items G through L on this Form- additional details must be provided in writing. Policy exclusions may not be accepted.

**§ 11.1.5 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 directly to the Owner, and separately to the Construction Manager, 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 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.

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**§ 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, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.

...

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. located. The parties expressly agree that any claim, dispute or other controversy of any



nature arising out of the Contract or performance of the Work shall be commenced and maintained in Supreme Court, Ulster County, or the United State District Court, Northern District of New York, if applicable.

**§ 13.1.2** The Contractor shall at all times observe and comply with all Federal and State Laws, and all Laws, Ordinances and Regulations of the Owner, in any manner affecting the work, and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the Work, and the Contractor shall defend, indemnify and save harmless the Owner, Construction Manager and Architect and all their officers, agents or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation or order, whether by himself or by his employee or agents.

**§ 13.1.3** The Contractor specifically agrees as required by Labor Law, Sections 220 and 220-d, as amended that:

- .1 No laborer, workman or mechanic in the employ of the Contractor, subcontractor or other person doing contracting or contracting to do the whole or any part of the work contemplated by the Contract, shall be permitted or required to work more than eight hours in one calendar day or more than five days in one week, except in the emergencies set forth in the Labor Law.
- .2 The wages paid for a legal day's work shall not be less than the prevailing rate of wages as defined by law, and
- .3 The minimum hourly rate of wages to be paid shall not be less than that stated in the Specifications, and any re-determination of the prevailing rate of wages after the Contract is approved shall be deemed to be incorporated herein by reference as of the effective date of re-determination and shall form a part of this Contract. The Labor Law provides that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction of willfully paying less than:
  - a. the stipulated wage scale as provided in Labor Law, Section 220, Sub-division 3, as amended; or
  - b. the stipulated minimum hourly wage scale as provided in Labor Law, 220-d, as amended.

**§ 13.1.4** The Contractor specifically agrees as required by the provisions of Labor Law, Section 220-e, as amended that:

- .1 In hiring of employees for the performance of work under this Contract or any subcontract hereunder or for the manufacture, sale, or distribution of materials, equipment or supplies, hereunder, no Contractor or Subcontractor nor any person acting on behalf of such Contractor or Subcontractor, 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.
- .2 No Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee under this Contract on account of race, creed, color, disability, sex, or national origin.
- .3 There may be deducted from the amount payable to the Contractor by the Owner under this Contract, a penalty of fifty dollars (\$50) for each person for each calendar day during which such a person was discriminated against or intimidated in violation of the provisions of the Contract, and
- .4 The provisions of this section covering every Contract for or on behalf of the Owner, the State or a municipality for the manufacture or sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

**§ 13.1.5** During the performance of this Contract, the Contractor agrees as follows:

- .1 The Contractor will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
- .2 If directed to do so by the Owner or the State Commissioner of Human Rights, the Contractor will send to each labor union or representative of workers which with the Contractor has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commissioner of Human Rights, advising such labor union or representative of the Contractor's agreement under clauses (1) through (6) (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the Owner as part of the bid or negotiation of this Contract, the Contractor shall request such labor union or representative to furnish a written statement that such a labor union representative will not discriminate because of age, race, creed, color, national origin, sexual



- orientation, military status, sex, disability, predisposing genetic characteristics, or marital status, and that such labor union or representative will cooperate, within the limits of its legal contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses and that it consents and agrees that the recruitment, employment and the terms and conditions of employment under this Contract shall be in accordance with the purposes and provision of these non-discrimination 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 Owner and the State Commissioner of Human Rights of such failure or refusal.
- .3 If directed to do so by the Owner or the Commissioner of Human Rights, the Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commissioner of Human Rights setting forth the substance of provisions of clauses (1) and (2) and such provision of the State's law against discrimination as the State Commissioner of Human Rights shall determine.
- .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 age, race, creed, color, national origin, sexual orientation, military status, sex, disability, predisposing genetic characteristics, marital status, or domestic violence victim status.
- .5 The Contractor will comply with the provisions of Sections 290-299 of the Executive Law, and with the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commissioner of Human Rights under these non-discrimination clauses and such section of the Executive Law, and will permit access to the Contractor's books, records, and accounts by the Owner, the State Commissioner of Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with the non-discrimination clauses and such sections of the Executive Law Civil Rights Law.
- .6 This Contract may be forthwith cancelled, terminated or suspended, in whole or in part, by the Owner upon the basis of a finding made by the State Commissioner of Human Rights that the Contractor has not complied with the non-discrimination clauses, and that the Contractor may be declared ineligible for future contracts made by or on behalf of the Owner, the State or a public authority or agency of the State, until the Contractor satisfies the State Commissioner of Human Rights that the Contractor has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings may be made by the State Commissioner of the Human Rights after conciliation efforts by the Commissioner have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commissioner, notice thereof has been given to the Contractor to be heard publicly in accordance with the Executive Law. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law, and
- .7 The Contractor will include the provisions of clauses .1 through .6 in every subcontract or purchase order in such a 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 action in enforcing such provisions of such subcontract or purchase order as the State Commissioner of Human Rights or the Owner may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved or is threatened with litigation with a subcontractor or vendor as a result of such directions by the State Commissioner of Human Rights or the Owner, the Contractor shall promptly so notify the Owner and the Attorney General requesting the Attorney General to intervene and protect the interests of the State of New York.

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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 to Contractor, including any interest, shall be consistent with this Agreement and in accordance with New York State General Municipal Law Section 106-b.

### **§ 13.6 Time Limits on Claims**

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law.



### **13.7 Equal Opportunity**

**§ 13.7.1** The Contractor shall maintain policies of employment as follows:

.1 The Contractor and the Contractor's subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or natural origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notice setting forth the policies of non-discrimination.

.2 The Contractor and the Contractor's subcontractors shall, in all solicitations or advertisement for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

### **§ 13.8 Wage Rates**

**§ 13.8.1** The Contractor shall comply with Prevailing Wage Rates issued and periodically updated, by the New York State Department of Labor, for the location and duration of the Project.

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~~.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, Work~~ under direct or indirect contract with the Contractor, 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-thirty (30)~~ seven-thirty (30) days' notice to the ~~Owner, Owner with reasonable opportunity to cure,~~ Construction Manager 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 properly executed.

**§ 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 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-thirty (30)~~ seven-thirty (30) additional days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

...

~~.1 repeatedly-refuses or fails to supply enough properly skilled workers or proper materials;~~

...

~~.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; breaches a material provision of the Contract Documents.~~

~~.5 breaches any warranty made by the Contractor under or pursuant to the Contract Documents.~~

~~.6 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all of the requirements of the Contract Documents."~~

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, ~~after consultation with the Construction Manager, 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:

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- .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. The costs of finishing the Work include, without limitations, all reasonable attorney's fees incurred by the Owner, additional Architect/Engineering and Construction Manager costs, insurance, additional interest because of any delay in completing the Work.

...

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and 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, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

...

§ 14.3.2 The Contract Sum and the Contract Time ~~shall~~ may 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:

...

§ 14.4.1 ~~The Owner may, at any time, terminate the Contract~~ Notwithstanding any other provision to the contrary in this Agreement, the Owner reserves the right at any time and in its absolute discretion to terminate the services of the Contractor and/or the Work for the Owner's convenience and without cause. ~~cause by giving written notice to the Contractor. This termination for the convenience of the Owner provision allows and authorizes the Owner to terminate this Agreement at any time and for any reason whatsoever. This right may be exercised by the Owner in its complete discretion.~~

...

§ 14.4.3 ~~In the 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; the Contractor shall be entitled to, and the Owner shall reimburse the Contractor for, an equitable portion of the Contractor's fee based on the portion of the Work properly completed before the effective date of termination. Contractor's entitlement to payment for all such work shall be predicated on its performance of such work in accordance with the Contract Documents as certified by the Architect and Construction Manager. Contractor shall be entitled to no other payment and waives any claim for damages.~~

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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.~~ law.

§ 15.1.2.1 Claims by the Contractor must be made by written notice in accordance with the following procedures.

- .1 the Contractor may submit a claim concerning a matter properly noticed in accordance with the time requirements of this Contract set forth in paragraph 15.1.2 and elsewhere;



- .2 failure by the Contractor to furnish the required claim documentation within the time set forth above shall constitute waiver of the Contractor's right to compensation for such claim.
- .3 Contractor shall furnish three (3) certified copies of the required claim documentation. The claim documentation shall be complete when furnished. The evaluation of the Contractor's claim will be based, among other things, upon the Owner's Project Records and the Contractor's furnished claim documentation
- .4 claim documentation shall conform to Generally Accepted Accounting Principles and shall be in the following format:
  - a. general introduction;
  - b. general background discussion
  - c. issues
    - i. index of issues (listed numerically);
    - ii. for each issue:
      - (1) background
      - (2) chronology
      - (3) Contractor's position (reason for Owner's potential liability)
      - (4) supporting documentation of merit or entitlement
      - (5) supporting documentation of damages
      - (6) begin each issue on a new page
  - d. all critical path method schedules (as-planned, monthly updates, schedule revisions and as-built, along with computer disks of all schedules related to the claim;
  - e. productivity exhibits (if appropriate); and
  - f. summary of issues and damages.
- .5 supporting documentation of merit for each issue shall be cited by reference, photocopies or explanation. Supporting documentation may include, but shall not be limited to General Conditions, General Requirements, technical specifications, drawings, correspondence, conference notes, shop drawings and submittals, shop drawing logs, survey books, inspection reports, delivery schedules, test reports, daily reports, subcontracts, fragmentary CPM schedules or time impact analyses, photographs, technical reports, requests for information, field instructions and all other related records necessary to support the Contractor's claim.
- .6 supporting documentation of damages for each issue shall be cited, photocopied or explained. Supporting documentation may include, but shall not be limited to, any or all documents related to the preparation and submission of the bid; certified, detailed labor records including labor distribution reports; material and equipment procurement records; construction equipment ownership, cost records or rental records; subcontractor or vendor files and cost records; service cost records; purchase orders; invoices; Project as-planned and as-built cost records; general ledger records; variance reports; accounting adjustment records, and any other accounting material necessary to support the Contractor's claims.
- .7 each copy of the claim documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of these Contract Documents.

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**§ 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.

...

**§ 15.1.6.1** 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.

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**§ 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, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any~~ If a Claim has not been resolved after consideration of the foregoing and of



further evidence presented by the parties or requested by the Architect, the Architect will render to the parties the Architect's written recommendation relative to the Claim, including any recommended 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. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

...

**§ 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 of receipt thereof, then both parties waive their rights to ~~mediate or pursue binding dispute resolution proceedings with respect to the initial decision.~~ mediate.

...

**§ 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. Intentionally omitted.

**§ 15.3.2** The parties ~~shall~~ may 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~~ 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.

...

#### **§ 15.4 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.



**~~§ 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.



## ***Certification of Document's Authenticity***

***AIA® Document D401™ – 2003***

I, Kim Ruebel, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 13:58:43 ET on 01/16/2024 under Order No. 3104237909 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A232™ – 2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, other than those additions and deletions shown in the associated Additions and Deletions Report.

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*(Signed)*

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*(Title)*

---

*(Dated)*





Kathy Hochul, Governor

Roberta Reardon, Commissioner

Wallkill Central School Dist

Thomas Farlow, Project Manager  
Tetra Tech Archs & Engs  
10 Brown Road  
Ithaca NY 14850

Schedule Year 2024 through 2025  
Date Requested 01/16/2024  
PRC# 2024000547

Location 1270 Route 32  
Project ID# 17597-22002B  
Project Type Reconstruction to Plattekill Elementary School

### 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 Rate Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2024 through June 2025. 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](http://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.

## **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 from 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 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website [www.labor.ny.gov](http://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](http://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](http://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, contemporaneous, 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 12226 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.





Kathy Hochul, Governor

Roberta Reardon, Commissioner

Wallkill Central School Dist

Thomas Farlow, Project Manager  
Tetra Tech Archs & Engs  
10 Brown Road  
Ithaca NY 14850

Schedule Year 2024 through 2025  
Date Requested 01/16/2024  
PRC# 2024000547

Location 1270 Route 32  
Project ID# 17597-22002B  
Project Type Reconstruction to Plattekill Elementary School

### 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: \$ _____	Contract Type:	
Approximate Starting Date: ____/____/____	<input type="checkbox"/> (01) General Construction	
Approximate Completion Date: ____/____/____	<input type="checkbox"/> (02) Heating/Ventilation	
	<input type="checkbox"/> (03) Electrical	
	<input type="checkbox"/> (04) Plumbing	
	<input type="checkbox"/> (05) Other : _____	

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12226







### **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, <https://dol.ny.gov/public-work-and-prevailing-wage>

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](mailto: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](http://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.



**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 12226

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.









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](mailto:dol.misclassified@labor.ny.gov). All complaints of fraud and violations are taken seriously. You can remain anonymous.**

**Employer Name:**

IA 999 (09/16)









# 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.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

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:**  
**<https://dol.ny.gov/bureau-public-work>**



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) 568-5287		

\* 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](http://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 or 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 requirements 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 than 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](http://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 12226

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



## Ulster County General Construction

### Boilermaker

10/01/2024

**JOB DESCRIPTION** Boilermaker

**DISTRICT** 4

#### ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

#### WAGES

Per Hour: 07/01/2024 01/01/2025

Boilermaker \$ 67.38 \$ 68.88

Repairs & Renovations 67.38 68.88

Repairs & Renovation: Includes Repairing, Renovating replacement of parts to an existing unit(s).

#### SUPPLEMENTAL BENEFITS

Per Hour:

Boilermaker	33.5% of hourly	33.5% of Hourly
Repair & Renovations	Wage Paid	Wage Paid
	+ \$ 26.85	+ \$26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

#### OVERTIME PAY

See (\*B, O, \*\*U) on OVERTIME PAGE

Note:\* Includes 9th & 10th hours, double for 11th or more.

\*\* Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

#### REGISTERED APPRENTICES

Wage per hour:

(1/2) Year Terms at the following percentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

	33.5% of Hourly Wage Paid Plus Amount Below	33.5% of Hourly Wage Paid Plus Amount Below
1st Term	\$ 20.36	\$ 20.36
2nd Term	21.28	21.28
3rd Term	22.22	22.22
4th Term	23.12	23.12
5th Term	24.07	24.07
6th Term	25.00	25.00
7th Term	25.93	25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

### Carpenter - Building / Heavy&Highway

10/01/2024

**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: 07/01/2024

Carpenter - ONLY for  
Artificial Turf/Synthetic  
Sport Surface

\$ 36.48

Note - Does not include the operation of equipment. Please see Operating Engineers rates.

## SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 26.55

## 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. When 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 (1300 hour terms at the following percentage of Journeyworker's wage):

1st	2nd	3rd	4th
65%	70%	75%	80%

Supplemental Benefits per hour:

\$18.58	\$19.14	\$21.24	\$21.79
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2-42AtSS

## Carpenter - Building / Heavy&Highway

10/01/2024

**JOB DESCRIPTION** Carpenter - Building / Heavy&Highway

**DISTRICT** 11

## ENTIRE COUNTIES

Columbia, Dutchess, Orange, Sullivan, Ulster

## WAGES

WAGES (per hour)

Applies to Carpenter (Building/Heavy & Highway/Tunnel), Dockbuilder, Piledriver, Dive Tender, and Diver (Dry):

	07/01/2024	07/01/2025	07/01/2026
Base Wage	\$ 37.19 + 6.31*	Additional \$ 2.23**	Additional \$ 2.30**

Applies to Diver (Wet):

Base Wage	\$ 50.00 + 6.31*
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\*For all hours paid straight or premium.

\*\*To be allocated at a later date.

## SHIFT WORK

SHIFT DIFFERENTIAL: When mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of the base wage.

## SUPPLEMENTAL BENEFITS

Per hour:



Journeyworker \$ 30.65

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

BUILDING:

Paid: See ( 1 ) on HOLIDAY PAGE.

Overtime: See ( 5, 6, 16, 25 ) on HOLIDAY PAGE.

- Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:

Paid: See ( 5, 6, 25 ) on HOLIDAY PAGE

Overtime: See ( 5, 6 ) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday

- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay

- If Employee is entitled to a paid holiday, the Employee is paid the Holiday wage and supplemental benefits whether they work or not. If Employee works the Holiday, the Employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If Employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

**REGISTERED APPRENTICES**

1 Year terms at the following wage rates.

1st	2nd	3rd	4th
\$ 18.60	\$ 22.31	\$ 26.03	\$ 29.75
+3.09*	+3.09*	+3.09*	+3.09*

\*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All Terms \$ 16.30

11-279.2B/H&H

**Carpenter - Floor Coverer**

**10/01/2024**

**JOB DESCRIPTION** Carpenter - Floor Coverer

**DISTRICT** 11

**ENTIRE COUNTIES**

Columbia, Sullivan, Ulster

**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)

	07/01/2024	07/01/2025
Carpet/Resilient Floor Coverer	\$ 37.19	Additional
	+6.31*	\$ 2.23**

\* For all hours paid straight or premium

\*\* To be allocated at a later date.

**SHIFT WORK**

SHIFT DIFFERENTIAL: When mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen (15) percent of wage plus applicable benefits.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journey worker \$ 30.65

**OVERTIME PAY**

See (B, E, Q) on OVERTIME PAGE

**HOLIDAY**

BUILDING:

Paid: See ( 1 ) on HOLIDAY PAGE.

Overtime: See ( 5, 6, 16, 25 ) on HOLIDAY PAGE.



- Holidays that fall on Sunday will be observed Monday.

**HEAVY&HIGHWAY/TUNNEL:**

Paid: See ( 5, 6, 25 ) on HOLIDAY PAGE

Overtime: See ( 5, 6 ) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday

- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay

- If Employee is entitled to a paid holiday, the Employee is paid the Holiday wage and supplemental benefits whether they work or not. If Employee works the Holiday, the Employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If Employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

**REGISTERED APPRENTICES**

1 Year terms at the following wage rates.

1st	2nd	3rd	4th
\$ 18.60	\$ 22.31	\$ 26.03	\$ 29.75
+3.09*	+3.09*	+3.09*	+3.09*

\*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All terms \$ 16.30

11-279.2Floor

**Electrician**

**10/01/2024**

**JOB DESCRIPTION** Electrician

**DISTRICT** 11

**ENTIRE COUNTIES**

Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Only in the Townships of Andes, Harpersfield, Kortwright, Stamford, Bovina, Roxbury, Middletown and those portions of Colchester and Hancock south of the East Branch of the Delaware River.

Dutchess: All of the county except for the towns of Fishkill, East Fishkill, and Beacon.

Greene: That portion of the county south of a line following the south limits of the city of Catskill in a Westerly direction from the Hudson River to Highway 23A along 23A to the road following the Little Westkill and continuing along this road to Delaware County.

**WAGES**

Per hour:

Electrician Wireman/ Technician 07/01/2024

Electrical/Technician Projects

under \$ 250,000.00 \$ 46.50

+ 9.50\*

over \$ 250,000.00 \$ 50.50

+ 9.50\*

\*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

NOTE ADDITIONAL AMOUNTS PAID FOR THE FOLLOWING WORK LISTED BELOW (subject to overtime premiums):

- On jobs where employees are required to work from boatswain chairs, swinging scaffolds, etc., forty (40) feet or more above the ground, or under compressed air, using Scottair packs, or gas masks, they shall receive an additional \$2.00 per hour above the regular straight time rate.

- Journeyman Wireman working in Shafts, Tunnels or on Barges: \$5.00 above the Journeyman Wireman rate of pay

- Journeyman Wireman when performing welding or cable splicing: \$3.00 above the Journeyman Wireman rate of pay

- Journeyman Wireman required to have a NYS Asbestos Certificate: \$3.00 above the Journeyman Wireman rate of pay

- Journeyman Wireman required to have a CDL: \$3.00 above the Journeyman Wireman rate of pay.

**SHIFT WORK**

SHIFT DIFFERENTIAL: On Public Work in New York State when shift work is mandated either in the job specifications or by the contracting agency, the following rates apply:

Shift worked between 4:30pm & 12:30am

Electrical/Technician Projects

under \$ 250,000.00 \$ 54.56

+ 9.50\*

over \$ 250,000.00 \$ 59.30

+ 9.50\*

Shift worked between 12:30am & 8:30am

Electrical/Technician Projects



under \$ 250,000.00	\$ 61.12 + 9.50*
over \$ 250,000.00	\$ 66.35 + 9.50*

### SUPPLEMENTAL BENEFITS

Per hour:	07/01/2024
Journeyman	\$ 29.68 plus 3% of straight or premium wage

### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

### HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 13, 15, 16, 25) on HOLIDAY PAGE

When the holiday falls on a Saturday it is observed the Friday before. When the holiday falls on a Sunday it is observed on the Monday after.

### REGISTERED APPRENTICES

#### WAGES:

(1)year terms at the following rates

07/01/2024	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.01	\$ 19.40	\$ 24.25	\$ 29.10	\$ 33.95	\$ 36.38
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*	+2.50*
2nd Shift	18.78	22.76	28.45	34.13	39.82	42.67
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*	+2.50*
3rd Shift	21.04	25.49	31.86	38.24	44.61	47.80
	+1.00*	+1.00*	+1.50*	+2.00*	+2.50*	+2.50*
09/01/2024	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.01	\$ 19.40	\$ 24.25	\$ 29.10	\$ 33.95	\$ 36.38
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*
2nd Shift	18.78	22.76	28.45	34.13	39.82	42.67
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*
3rd Shift	21.04	25.49	31.86	38.24	44.61	47.80
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*
04/01/2025	1st	2nd	3rd	4th	5th	6th
1st Shift	\$ 16.34	\$ 19.80	\$ 24.75	\$ 29.70	\$ 34.65	\$ 37.13
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*
2nd Shift	19.17	23.23	29.03	34.84	40.64	43.55
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*
3rd Shift	21.47	26.02	32.52	39.03	45.53	48.79
	+1.00*	+1.00*	+1.00*	+2.00*	+2.50*	+2.50*

\*For all hours paid straight or premium, not to be included in 3% calculation for supplemental benefits.

#### SUPPLEMENTAL BENEFITS per hour:

##### 07/01/2024

1st term	\$ 16.28 plus 3% of straight or premium wage
2nd term	\$ 16.28 plus 3% of straight or premium wage
3rd term	\$ 18.28 plus 3% of straight or premium wage
4th term	\$ 18.78 plus 3% of straight or premium wage
5th term	\$ 20.28 plus 3% of straight or premium wage
6th term	\$ 20.28 plus 3% of straight or premium wage

##### 09/01/2024

1st term	\$ 16.28 plus 3% of straight or premium wage
2nd term	\$ 17.78 plus 3% of straight or premium wage
3rd term	\$ 18.78 plus 3% of straight or premium wage
4th term	\$ 19.78 plus 3% of straight or premium wage
5th term	\$ 21.28 plus 3% of straight or premium wage
6th term	\$ 21.28 plus 3% of straight or premium wage

11-363/2



**JOB DESCRIPTION** Elevator Constructor

**DISTRICT** 1

**ENTIRE COUNTIES**

Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

**PARTIAL COUNTIES**

Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford

Rockland: Only the Township of Stony Point.

Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

**WAGES**

Per Hour	07/01/2024	01/01/2025
Mechanic	\$ 70.15	\$ 73.07
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

**SUPPLEMENTAL BENEFITS**

Per hour	07/01/2024	01/01/2025
Journeyworker/Helper	\$ 37.885*	\$ 38.435*

(\*)Plus 6% of regular hourly if less than 5 years of service. Plus 8% of regular 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

1-138

**Glazier**

**10/01/2024**

**JOB DESCRIPTION** Glazier

**DISTRICT** 8

**ENTIRE COUNTIES**

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

**WAGES**

Per hour:	07/01/2024	05/01/2025
Glazier, Glass Tinting and Window Film	\$ 63.28	Additional \$ 1.11***
Scaffolding, including swing scaffold	67.28	
*Mechanical Equipment	64.28	
**Repair & Maintenance	30.76	

\*Mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.

\*\*Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under \$193,000.

\*\*\*To be allocated at a later date.

**SUPPLEMENTAL BENEFITS**

Per hour:	7/01/2024
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Glazier, Glass Tinting Window Film, Scaffolding and Mechanical Equipment	\$ 42.13
Repair & Maintenance	24.62

#### OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

#### HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

For 'Repair & Maintenance'

Paid: See(5, 6, 16, 25)

Overtime: See(5, 6, 16, 25)

#### REGISTERED APPRENTICES

Wage per hour:

(1) year terms at the following wage rates:

7/01/2024

1st term	\$ 22.34
2nd term	30.64
3rd term	40.87
4th term	50.14

Supplemental Benefits:

(Per hour)

1st term	\$ 19.27
2nd term	27.34
3rd term	32.85
4th term	36.01

8-1087 (DC9 NYC)

#### Insulator - Heat & Frost

10/01/2024

**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 07/01/2024

Asbestos Worker*	\$ 40.46
Insulator*	40.46
Firestopping Worker*	34.40

(\*) On Mechanical Systems only.

#### SHIFT WORK

On government mandated shift work additional 12% of wage for all shifts starting after 3:30 P.M.

#### SUPPLEMENTAL BENEFITS

Per hour

Journeyworker	\$ 26.86
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#### 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 \$ 26.86

1-40

<b>Ironworker</b>	<b>10/01/2024</b>
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**JOB DESCRIPTION** Ironworker

**DISTRICT** 11

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster

**WAGES**

Per hour:

	07/01/2024	07/01/2025 Additional	07/01/2026 Additional
Structural	\$ 51.38	\$ 2.00*	\$2.00*
Reinforcing	51.38	2.00*	2.00*
Ornamental	51.38	2.00*	2.00*
Chain Link Fence	51.38	2.00*	2.00*

\* To be allocated at a later date.

NOTE: For Reinforcing classification ONLY, Ironworker 4-46Reinf rates apply in Rockland County's southern section (south of Convent Road and east of Blue Hills Road).

**SHIFT WORK**

On Government Mandated Irregular Workdays or Shift Work, the following wage will be paid:

1st Shift	\$ 51.38
2nd Shift	66.39
3rd Shift	71.39

Note- Any shift that works past 12:00 midnight shall receive the 3rd shift differential.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyman \$ 45.56

**OVERTIME PAY**

See (B1, Q, V) on OVERTIME PAGE

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16) on HOLIDAY PAGE

If a holiday falls on Saturday, it will be observed Friday. If a holiday falls on Sunday, it will be observed Monday.

**REGISTERED APPRENTICES**

Wages:

(1) year terms at the following wage:

	1st yr	2nd yr	3rd yr	4th yr
1st Shift	\$ 25.69	\$ 30.83	\$ 35.97	\$ 41.10
2nd Shift	36.15	42.20	48.25	54.29
3rd Shift	39.64	45.99	52.35	58.69

Supplemental Benefits per hour:

	07/01/2024
1st year	\$ 40.94
2nd year	41.86
3rd year	42.79
4th year	43.71

11-417

<b>Laborer - Building</b>	<b>10/01/2024</b>
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**JOB DESCRIPTION** Laborer - Building

**DISTRICT** 11

**ENTIRE COUNTIES**

Orange, Sullivan, Ulster



## PARTIAL COUNTIES

Delaware: Only the Townships of Andes, Bovina, Davenport, Delhi, Franklin, Hamden, Harpersfield, Kortright, Meredith, Middletown, Roxbury, and Stamford.

Greene: Only the Township of Catskill.

## WAGES

Class 1: Custodial and janitorial work, general cleanup, and flag person.

Class 2: Concrete laborer, mason tending, hod carrier, signal person, pressure blasting and washing, chainsaw, demo saw, jackhammers, general labor.

Class 3: Jumping jack, air track drills, grading, explosive handler and blaster, grade checker. When OSHA requires negative pressure respirator.

Class 4: Environmental work including but not limited to asbestos abatement, toxic and hazardous abatement, lead abatement work, mold remediation and biohazards.

WAGES: (per hour)	07/01/2024	06/01/2025 Additional	06/01/2026 Additional
Class 1	\$ 43.15	\$ 2.69*	\$ 2.79*
Class 2	43.95	2.72*	2.82*
Class 3	45.90	2.79*	2.89*
Class 4	49.00	2.90*	3.00*

\*To be allocated at a later date.

These rates will cover all work within five feet of the building foundation line.

## SHIFT WORK

Shift Differential: On all Governmental mandated irregular or off shift work, an additional 25% of wage is required. The 25% shift differential will be paid on public works contract for shifts or irregular workdays outside the normal working hours for 2nd and 3rd shifts or irregular workday or when mandated or required by state, federal, county, local or other governmental agency contracts.

## SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 33.50
Shift	40.84

## OVERTIME PAY

See (B, \*E, E5, \*\*Q) on OVERTIME PAGE

\*For first 8 hours on Saturday

\*\*When an employee is required to work on a holiday which falls on a Sunday the employee shall be paid three (3) times the hourly rate and one (1) hour benefits for every hour worked. When an employee is required to work on a holiday which falls on a Saturday the employee shall be paid two and a half (2.5) times the hourly rate and one hour benefits for every hour worked.

## HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

Holidays that fall on Saturday shall be observed on Friday, when holidays fall on Sunday they shall be observed on Monday.

## REGISTERED APPRENTICES

(1000) hour terms at the following wages.

	07/01/2024
1st term	\$ 28.05
2nd term	32.35
3rd term	36.70
4th term	41.00

Supplemental Benefits per hour:

All Terms Regular	\$ 29.23
All Terms Shift Rate	35.39

11-17.BA

## Laborer - Heavy&Highway

10/01/2024

**JOB DESCRIPTION** Laborer - Heavy&Highway

**DISTRICT** 11

## ENTIRE COUNTIES

Orange, Sullivan, Ulster

## PARTIAL COUNTIES

Delaware: Only the Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Meredith, and Davenport.

Greene: Only the Township of Catskill.



## WAGES

CLASS 1: Flag person, gate person.

CLASS 2: General laborer, chuck tender, nipper, powder carrier, magazine tender, concrete men, vibrator men, mason tender, mortar men, traffic control, custodial work, temporary heat, pump men, pit men, dump men, asphalt men, joint setter, signalman, pipe men, riprap, dry stone layers, jack hammer, bush hammer, pavement breaker, men on mulching & seeding machines, all seeding & sod laying, landscape work, walk behind self-propelled power saws, grinder, walk behind rollers and tampers of all types, burner men, filling and wiring of baskets for gabion walls, chain saw operator, railroad track laborers, power buggy, plaster & acoustic pump, power brush cutter, retention liners, walk behind surface planer, chipping hammer, manhole, catch basin or inlet installing, mortar mixer, laser men. \*Micro paving and crack sealing.

CLASS 3: Asbestos, toxic, bioremediation and Phyto-remediation, lead or hazardous materials abatement when certification or license is required, Drilling Equipment Only Where a Separate Air Compressor Unit Supplies Power.

CLASS 4: Asphalt screed man, blaster, all laborers involved in pipejacking and boring operations not exceeding more than 10 feet into pipe, boring or drilled area.

WAGES: (per hour) 07/01/2024

Class 1	\$ 42.35
Class 2	46.05
Class 3	50.75
Class 4	55.80

\* When laborers are performing micro paving, crack sealing or slurry application when not part of asphalt prep operations laborers shall receive an additional \$2.50 per hour over rate.

\*\*To be allocated at a later date.

## SHIFT WORK

SHIFT DIFFERENTIAL: Night work and irregular shift require 20% increase on wages for all Government mandated night and irregular shift work.

## SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 33.38
Shift	39.18

## OVERTIME PAY

See (B, E, P, \*R, \*\*S, \*\*\*T, X) on OVERTIME PAGE

\*For Mon-Fri Holidays, Double Benefits to be paid for all hours worked.

\*\*For Saturday Holidays, Two- and one-half Benefits for all hours worked.

\*\*\*For Sunday Holidays, Triple Benefits for all hours worked.

## HOLIDAY

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 25) on HOLIDAY PAGE

To be eligible for a paid holiday, an employee must work at least two (2) days in the calendar week or payroll week in which the holiday falls.

## REGISTERED APPRENTICES

(1000) hour terms at the following wages.

	07/01/2024
1st term	\$ 28.05
2nd term	32.35
3rd term	36.70
4th term	41.00

Supplemental Benefits per hour:

All Terms Regular	\$ 29.23
All Terms Shift Rate	34.16

11-17.1H/H

## Laborer - Tunnel

10/01/2024

**JOB DESCRIPTION** Laborer - Tunnel

**DISTRICT** 11

## ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

## PARTIAL COUNTIES

Chenango: Townships of Columbus, Sherburne and New Berlin.

Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.



## 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

WAGES: (per hour)

	07/01/2024	06/01/2025
Class 1	\$ 57.05	\$ 58.55
Class 2	59.20	60.70
Class 4	65.60	67.10
Class 5	49.90	51.40

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional \$ 3.00 an hour.

## SHIFT WORK

SHIFT DIFFERENTIAL...On all Government mandated irregular shift work:

- Employee shall be paid at time and one half the regular rate Monday through Friday.
- Saturday shall be paid at 1.65 times the regular rate.
- Sunday shall be paid at 2.15 times the regular rate.

## SUPPLEMENTAL BENEFITS

Per hour:

Benefit 1	\$ 36.98	\$ 38.23
Benefit 2	55.39	59.99
Benefit 3	74.58	76.73

Benefit 1 applies to straight time hours, paid holidays not worked.

Benefit 2 applies to over 8 hours in a day (M-F), irregular shift work hours worked, and Saturday hours worked.

Benefit 3 applies to Sunday and Holiday hours worked.

## OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE

## HOLIDAY

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

## 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.

11-17/60/235/754Tun

## Lineman Electrician

10/01/2024

**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

A 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, assembly of all electrical materials, conduit, pipe, 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.

Crane Operators: Operation of any type of crane on line projects.

Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on line projects.

Digging Machine Operator: All other digging equipment and augering on line projects.



A 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/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

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. Includes access matting for line work.

Per hour: 07/01/2024

Group A:	
Lineman, Technician	\$ 58.90
Crane, Crawler Backhoe	58.90
Welder, Cable Splicer	58.90

Group B:	
Digging Mach. Operator	53.01
Tractor Trailer Driver	50.07
Groundman, Truck Driver	47.12
Equipment Mechanic	47.12
Flagman	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." Includes access matting for line work.

Group A:	
Lineman, Technician	\$ 58.90
Crane, Crawler Backhoe	58.90
Cable Splicer	64.79
Certified Welder,	
Pipe Type Cable	61.85

Group B:	
Digging Mach. Operator	53.01
Tractor Trailer Driver	50.07
Groundman, Truck Driver	47.12
Equipment Mechanic	47.12
Flagman	35.34

Additional \$1.00 per hour for entire crew when a helicopter is used.

Below rates applicable on all switching structures, maintenance projects, railroad catenary install/maintenance third rail installation, bonding of rails and pipe type cable and installation of fiber optic cable. Includes access matting for line work.

Group A:	
Lineman, Tech, Welder	\$ 60.22
Crane, Crawler Backhoe	60.22
Cable Splicer	66.24
Certified Welder,	
Pipe Type Cable	63.23

Group B:	
Digging Mach. Operator	54.20
Tractor Trailer Driver	51.19
Groundman, Truck Driver	48.18
Equipment Mechanic	48.18
Flagman	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. Includes access matting for line work.

Group A:	
Lineman, Tech, Welder	\$ 61.41
Crane, Crawler Backhoe	61.41

Group B:	
Digging Mach. Operator	55.27
Tractor Trailer Driver	52.20
Groundman, Truck Driver	49.13
Equipment Mechanic	49.13
Flagman	36.85

Additional \$1.00 per hour for entire crew when a helicopter is used.

### SHIFT WORK

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 %

### SUPPLEMENTAL BENEFITS

Per hour:

07/01/2024

Group A	\$ 30.90
	*plus 7% of the hourly wage paid

Group B	\$ 26.90
	*plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

### OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for all emergency work designated by the Dept. of Jurisdiction.

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 Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2024

\$ 26.90
*plus 7% of the hourly wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.



**Lineman Electrician - Teledata**

**10/01/2024**

**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).

07/01/2024

01/01/2025

Cable Splicer	\$ 39.24	\$ 40.81
Installer, Repairman	\$ 37.24	\$ 38.73
Teledata Lineman	\$ 37.24	\$ 38.73
Tech., Equip. Operator	\$ 37.24	\$ 38.73
Groundman	\$ 19.74	\$ 20.53

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

**SHIFT WORK**

THE FOLLOWING RATES APPLY WHEN THE CONTRACTING AGENCY MANDATES MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION ARE WORKED. WHEN TWO (2) OR THREE (3) SHIFTS ARE WORKED THE FOLLOWING RATES APPLY:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

**SUPPLEMENTAL BENEFITS**

Per hour:	07/01/2024	01/01/2025
Journeyworker	\$ 5.70	\$ 5.70
	*plus 3% of the hour wage paid	*plus 3% of the hour 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

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**

**10/01/2024**

**JOB DESCRIPTION** Lineman Electrician - Traffic Signal, Lighting

**DISTRICT 6**

**ENTIRE COUNTIES**

Columbia, Dutchess, Orange, Putnam, Rockland, Ulster

**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.

Crane Operators: Operation of any type of crane on Traffic Signal/Lighting projects.

Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on Traffic Signal/Lighting projects.

Digging Machine Operator: All other digging equipment and augering on Traffic Signal/Lighting projects.



A 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/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

Per hour: 07/01/2024

Group A:	
Lineman, Technician	\$ 51.82
Crane, Crawler Backhoe	51.82
Certified Welder	54.41

Group B:	
Digging Machine	46.64
Tractor Trailer Driver	44.05
Groundman, Truck Driver	41.46
Equipment Mechanic	41.46
Flagman	31.09

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.

#### SHIFT WORK

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%

#### SUPPLEMENTAL BENEFITS

Per hour worked:

07/01/2024

Group A:	\$ 30.90
	*plus 7% of
	the hourly
	wage paid

Group B	\$ 26.90
	*plus 7% of
	the hourly
	wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

#### OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for all emergency work designated by the Dept. of Jurisdiction.

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 and Governor of NYS Election Day.

Overtime: See ( 5, 6, 8, 13, 25 ) on HOLIDAY PAGE and 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 Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%



SUPPLEMENTAL BENEFITS per hour:

07/01/2024

\$ 26.90  
\*plus 7% of  
the hourly  
wage paid

\*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249aReg8LT

**Lineman Electrician - Tree Trimmer**

**10/01/2024**

**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 includes stump removal near underground energized electrical lines including telephone and CATV lines.

Per hour: 07/01/2024

Tree Trimmer	\$ 31.44
Equipment Operator	27.80
Equipment Mechanic	27.80
Truck Driver	23.15
Groundman	19.07
Flag person	15.00*

\*NOTE-Rate effective on 01/01/2025 - \$15.50 due to minimum wage increase.

**SUPPLEMENTAL BENEFITS**

Per hour:

07/01/2024

Journeyworker \$ 10.48  
\*plus 4.5% of  
the hourly  
wage paid

\* The 4.5% is based on the hourly wage paid, straight time rate or premium rate.

**OVERTIME PAY**

See (B, E, Q, X) on OVERTIME PAGE

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**

**10/01/2024**

**JOB DESCRIPTION** Mason - Building

**DISTRICT 11**

**ENTIRE COUNTIES**

Dutchess, Sullivan, Ulster

**PARTIAL COUNTIES**

Orange: Entire county except the Township of Tuxedo.

**WAGES**

Per hour:



07/01/2024

Bricklayer	\$ 46.45
Cement Mason	46.45
Plasterer/Stone Mason	46.45
Pointer/Caulker	46.45

Additional \$1.00 per hour for power saw work  
Additional \$0.50 per hour for swing scaffold or staging work

**SHIFT WORK**  
SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:  
Irregular workday requires 15% premium  
Second shift an additional 15% of wage plus benefits to be paid  
Third shift an additional 25% of wage plus benefits to be paid

**SUPPLEMENTAL BENEFITS**  
Per hour:

Journeyman	\$ 38.00
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**OVERTIME PAY**  
Cement Mason See ( B, E, Q, W ) on OVERTIME PAGE.  
All Others See ( B, E, Q ) on OVERTIME PAGE.

**HOLIDAY**  
Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE  
Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

**REGISTERED APPRENTICES**  
Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5du-b

<b>Mason - Building</b>	<b>10/01/2024</b>
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<b>JOB DESCRIPTION</b> Mason - Building	<b>DISTRICT</b> 9
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**ENTIRE COUNTIES**  
Dutchess, Orange, Putnam, Sullivan, Ulster

<b>WAGES</b>		
Per hour:	07/01/2024	12/02/2024
Building:		Additional
Tile, Marble,& Terrazzo Mechanic/Setter	\$ 58.06	\$ 0.63*

\*To be allocated at a later date.

**SUPPLEMENTAL BENEFITS**  
Per Hour:  
Journeyworker: \$ 25.11\*  
+ 6.14

\* This portion of benefits subject to same premium rate as shown for overtime wages.



### OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

Double time rate applies after 10 hours

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wage per hour:

(Counties of Orange & Putnam)

750 hour terms at the following wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-	751-	1501-	2251-	3001-	3751-	4501-	5251-	6001-	6751-
750	1500	2250	3000	3750	4500	5250	6000	6750	7500
07/01/2024									
\$22.19	\$27.21	\$34.45	\$39.46	\$43.07	\$46.58	50.23	\$55.24	\$57.71	\$62.00

Supplemental Benefits per hour:

(Counties of Orange & Putnam)

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2024									
\$12.55*	\$12.55*	\$15.36*	\$15.36*	\$16.36*	\$17.86*	\$18.86*	\$18.86*	\$18.86*	\$24.11*
+ 0.76	+ 0.81	+ 0.91	+ 0.96	+ 1.43	+ 1.48	+ 1.91	+ 1.97	+ 4.57	+ 5.18

Wages per hour:

(Counties of Dutchess, Sullivan, Ulster)

750 hour terms at the following wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-	751-	1501-	2251-	3001-	3751-	4501-	5251-	6001-	6751-
750	1500	2250	3000	3750	4500	5250	6000	6750	7500
07/01/2024									
\$22.06	\$26.44	\$28.50	\$32.88	\$35.84	\$39.71	\$43.21	\$46.59	\$47.95	\$51.44

Supplemental Benefits per hour:

(Counties of Dutchess, Sullivan, Ulster)

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2024									
\$12.55*	\$12.55*	\$14.86*	\$14.86*	\$15.86*	\$16.36*	\$16.86*	\$17.86*	\$17.86*	\$22.61*
+ 0.76	+ 0.80	+ 0.85	+ 0.89	+ 1.35	+ 1.40	+ 1.82	+ 1.87	+ 4.93	+ 5.02

\* This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52B

### Mason - Building

10/01/2024

**JOB DESCRIPTION** Mason - Building

**DISTRICT** 9

### ENTIRE COUNTIES

Dutchess, Orange, Putnam, Sullivan, Ulster

### WAGES

Per hour: 07/01/2024

Building 12/02/2024

Additional

Tile, Marble, &



Terrazzo Finisher	\$ 47.74	\$ 0.54*
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\*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Journeyworker:

Per Hour	\$ 22.11*
	+ 6.01

\*This portion of benefits subject to same premium rate as shown for overtime wages

OVERTIME PAY

See (A, \*E, Q) on OVERTIME PAGE  
Double time rate applies after 10 hours on Saturdays.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88B-tf

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES  
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2024	01/06/2025
		Additional
Marble Cutters & Setters	\$ 63.92	\$ 0.75*

\*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker	\$ 40.05
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OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage Per Hour:

07/01/2024							
750 hour terms at the following wage							
1st	2nd	3rd	4th	5th	6th	7th	8th
0-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6751-7500	7500+
\$ 27.01	\$ 40.52	\$ 43.88	\$ 47.26	\$ 50.64	\$ 54.32	\$ 60.71	\$ 63.92

Supplemental Benefits per hour:

07/01/2024							
1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 26.42	\$ 29.76	\$ 30.61	\$ 31.44	\$ 32.28	\$ 37.55	\$ 39.23	\$ 40.05

9-7/4

Mason - Heavy&Highway	10/01/2024
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JOB DESCRIPTION Mason - Heavy&Highway

DISTRICT 11

ENTIRE COUNTIES  
Dutchess, Sullivan, Ulster

PARTIAL COUNTIES



Orange: Entire county except the Township of Tuxedo.

## WAGES

Per hour:

07/01/2024

Bricklayer	\$ 46.95
Cement Mason	46.95
Marble/Stone Mason	46.95
Plasterer	46.95
Pointer/Caulker	46.95

Additional \$1.00 per hour for power saw work

Additional \$0.50 per hour for swing scaffold or staging work

## SHIFT WORK

When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:

Irregular workday requires 15% premium

Second shift an additional 15% of wage plus benefits to be paid

Third shift an additional 25% of wage plus benefits to be paid

## SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 38.00

## OVERTIME PAY

Cement Mason See ( B, E, Q, W )

All Others See ( B, E, Q )

## HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

- Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

- Supplemental Benefits are not paid for paid Holiday

- If Holiday is worked, Supplemental Benefits are paid for hours worked.

- Whenever an Employee works within three (3) calendar days before a holiday, the Employee shall be paid for the Holiday.

## REGISTERED APPRENTICES

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5du-H/H

## Millwright

10/01/2024

## JOB DESCRIPTION Millwright

## DISTRICT 6

### 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

## WAGES

THE FOLLOWING RATE APPLIES TO ANY GAS/STEAM TURBINE AND OR RELATED COMPONENT WORK, INCLUDING NEW INSTALLATIONS OR MAINTENANCE AND ANY/ALL WORK PERFORMED WITHIN THE PROPERTY LIMITS OF A NUCLEAR FACILITY.

Per hour:

07/01/2024

07/01/2025

Millwright - Power Generation

\$ 45.00

Additional  
\$2.50\*

\* To be allocated at a later date.



NOTE: ADDITIONAL PREMIUMS PAID FOR THE FOLLOWING WORK LISTED BELOW (amount subject to any overtime premiums):

- Certified Welders shall receive an additional \$1.75 per hour provided they are directed to perform Certified Welding.
- 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) is required, then that employee shall receive an additional \$1.50 per hour.
- An employee performing the work of a machinist shall receive an additional \$2.00 per hour. 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 per hour.

SUPPLEMENTAL BENEFITS

Per hour paid:

Journeyworker \$ 27.95\*

\*NOTE: Subject to OT premium

OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

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: One year terms at the following percentage of Journeyworker's wage:

Appr. 1st year	65 %*
Appr. 2nd year	75 %*
Appr. 3rd year	80 %*
Appr. 4th year	90 %*

\*NOTE: Additional premium for the following work listed below:

Certified Welder	\$ 1.75
Hazardous Waste Work	1.50
Machinist	2.00
Underground	1.00
(500' and below)	

SUPPLEMENTAL BENEFITS per hour:

Appr. 1st year	\$ 11.89
Appr. 2nd year	23.14
Appr. 3rd year	24.74
Appr. 4th year	26.35

6-1163Power

Millwright	10/01/2024
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JOB DESCRIPTION MillwrightDISTRICT 2

ENTIRE COUNTIES

Sullivan, Ulster

WAGES

Per hour:	07/01/2024	07/01/2025
		Additional
Building	\$ 42.54	\$ 2.00*
Heavy & Highway	46.04	2.00*

\*To be allocated at a later date

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:

Journeyworker \$ 30.99

### 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 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 Journeyworker's rate.

1st	2nd	3rd	4th
65%	75%	80%	90%

Supplemental Benefits per hour:

Apprentices:

1st term	\$ 11.89
2nd term	25.26
3rd term	27.17
4th term	29.08

2-1163.3

## Operating Engineer - Building / Heavy&Highway

10/01/2024

**JOB DESCRIPTION** Operating Engineer - Building / Heavy&Highway

**DISTRICT** 11

### ENTIRE COUNTIES

Delaware, Orange, Rockland, Sullivan, Ulster

### WAGES

CLASS A5: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with 140ft boom and over.

CLASS A4: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with 100ft to 139ft boom.

CLASS A3: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes with a boom under 100ft.

CLASS A2: Cranes, Derricks and Pile Drivers less than 100 tons with 140ft boom and over.

CLASS A1: Cranes, Derricks and Pile Drivers less than 100 tons with a 100ft to 139ft boom.

CLASS A: Cranes, Derricks and Pile Drivers less than 100 tons with a boom under 100ft.; Autograde Combination Subgrader, Base Material Spreader and Base Trimmer (CMI and Similar Types); Autograde Pavement profiler (CMI and Similar Types); Autograde Pavement Profiler and Recycle type (CMI and Similar Type); Autograde Placer-Trimmer-Spreader Comb. (CMI & Similar types); Autograde Slipform Paver (CMI & Similar Types); Central Power Plants (all types); Chief of Party; Concrete Paving Machines; Drill (Bauer, AMI and Similar Types); Drillmaster, Quarrymaster (Down the Hole Drill), Rotary Drill, Self-Propelled Hydraulic Drill, Self-Powered Drill; Draglines; Elevator Graders; Excavator; Front End Loaders (5 yds. and over); Gradall's; Grader-Rago; Helicopters (Co-Pilot); Helicopters (Communications Engineer);Juntann Pile Driver; Locomotive (Large); Mucking Machines; Pavement & Concrete Breaker, i.e., Superhammer & Hoe Ram; Roadway Surface Grinder; Prentice Truck; Scooper (Loader and Shovel); Shovels; Tree Chopper with Boom; Trench Machines (Cable Plow); Tunnel Boring Machine; Vacuum Truck

CLASS B: "A" Frame; Backhoe (Combination); Boom Attachment on Loaders (Rate based on size of Bucket) not applicable to Pipehook; Boring and Drilling Machines; Brush Chopper, Shredder and Tree Shredder, Tree Shearer; Bulldozer(Fine Grade); Cableways; Carryalls; Concrete Pump; Concrete Pumping System, Pump Concrete and Similar Types; Conveyors (125 ft. and over); Drill Doctor (duties incl. Dust Collector Maintenance); Front End Loaders (2 yds. but less than 5 yds.); Graders (Finish); Groove Cutting Machine (Ride on Type); Heater Planer; Hoists (all type Hoists, shall also include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft Caisson, Snorkel Roof, and/or any other Similar Type Hoisting Machines, portable or stationary, except Chicago Boom Type); Long Boom Rate to be applied if Hoist is "Outside Material Tower Hoist"\*\*\*; Hydraulic Cranes-10 tons and under; Hydraulic Dredge; Hydro-Axe; Hydro Blaster; Jacks-Screw Air Hydraulic Power Operated Unit or Console Type (not hand Jack or Pile Load Test Type); Log Skidder; Pans; Pavers (all) concrete; Plate and Frame Filter Press; Pumpcrete Machines, Squeezecrete & Concrete Pumping (regardless of size); Scrapers; Side Booms; "Straddle"Carrier-Ross and similar types; Winch Trucks (Hoisting); Whip Hammer



CLASS C: Asphalt Curbing Machine; Asphalt Plant Engineer; Asphalt Spreader; Autograde Tube Finisher and Texturing Machine (CMI & Similar types); Autograde Curecrete Machine (CMI & Similar Types); Autograde Curb Trimmer & Sidewalk, Shoulder, Slipform (CMI & Similar Types); Bar Bending Machines (Power); Barrier Moving Machine-Zipper; Batchers, Batching Plant and Crusher on Site; Belt Conveyor Systems; Boom Type Skimmer Machines; Bridge Deck Finisher; Bulldozer(except fine grade); Car Dumpers (Railroad); Compressor and Blower Type Units (used independently or mounted on dual purpose Trucks, on Job Site or in conjunction with jobsite, in Loading and Unloading of Concrete, Cement, Fly Ash, Instantcrete, or Similar Type Materials); Compressors (2 or 3 in Battery); Concrete Finishing Machines; Concrete cleaning decontamination machine operator; Concrete Saws and Cutters (Ride-on type); Concrete Spreaders (Hetzl, Rexomatic and Similar Types); Concrete Vibrators; Conveyors (under 125 feet); Crushing Machines; Directional Boring Machines; Ditching Machine-small (Ditch-witch, Vermeer, or Similar type); Dope Pots (Mechanical with or without pump); Dumpsters; Elevator; Fireman; Fork Lifts (Economobile, Lull and Similar Types of Equipment); Front End Loaders (1 yd. and over but under 2 yds.); Generators (2 or 3 in Battery); Giraffe Grinders; Grout Pump; Gunnite Machines (excluding nozzle); Hammer Vibrator (in conjunction with Generator); Heavy Equipment Robotics Operator Technician; Hoists-Roof, Tugger, Aerial Platform Hoist & House Cars; Hoppers; Hopper Doors (power operated); Hydro Blaster; Hydraulic Jacking Trailer; Ladders (motorized); Laddervator; Locomotive-dinky type; Maintenance -Utility Man; Master Environmental Maintenance Technician; Mechanics; Mixers (Excepting Paving Mixers); Motor Patrols; Pavement Breakers (small self - propelled ride on type-also maintains compressor hydraulic unit); Pavement Breaker-truck mounted; Pipe Bending Machine (Power); Pitch Pump; Plaster Pump (regardless of size); Post Hole Digger (Post Pounder & Auger); Pot Hole Killer Trucks or equivalent; Rod Bending Machines (Power); Roller-Black Top; Scales (Power); Seaman pulverizing mixer; Shoulder widener; Silos; Skidsteer (all attachments); Skimmer Machines (boom-type); Steel Cutting Machine (service & maintain); Tam Rock Drill; Tractors; Transfer Machine; Captain (Power Boats); Tug Master (powerboats); Ultra High Pressure Waterjet Cutting Tool System operator/maintenance technician; Vacuum Blasting Machine; Vibrating Plants (used in conjunction with unloading); Welder and Repair Mechanics

CLASS D: Brooms and Sweepers; Chippers; Compressor (single); Concrete Spreaders (small type); Conveyor Loaders (not including Elevator Graders); Engines-large diesel (1620 HP) and Staging Pump; Farm Tractors; Fertilizing Equipment (Operation & Maintenance of); Fine Grade Machine (small type); Form Line Graders (small type); Front End Loader (under 1 yard); Generator (single); Grease, Gas, Fuel and Oil supply trucks; Heaters (Nelson or other type incl. Propane, Natural Gas or Flow type Units); Lights, Portable Generating Light Plants; Mixers (Concrete, small); Mulching Equipment (Operation and Maintenance of); Pumps (2 or less than 4 inch suction); Pumps (4 inch suction and over incl. submersible pumps); Pumps (Diesel Engine and Hydraulic-immaterial of power); Road Finishing Machines (small type); Rollers-grade, fill or stone base; Seeding Equip. (Operation and Maintenance of); Sprinkler & Water Pump Trucks (used on jobsite or in conjunction with jobsite); Steam Jennies and Boilers-irrespective of use; Stone Spreader; Tamping Machines, Vibrating Ride-on; Temporary Heating Plant (Nelson or other type, incl. Propane, Natural Gas or Flow Type Units); Water & Sprinkler Trucks (used on or in conjunction with jobsite); Welding Machines (Gas, Diesel, and/or Electric Converters of any type, single, two, or three in a battery); Wellpoint Systems (including installation by Bull Gang and Maintenance of)

CLASS E: Assistant Engineer/Oiler; Drillers Helper; Maintenance Apprentice (Deck Hand); Maintenance Apprentice (Oiler); Mechanics' Helper; Tire Repair and Maintenance; Transit/Instrument Man

WAGES:(per hour)

	07/01/2024	07/01/2025 Additional
Class A5	\$ 66.97 plus 5.00*	\$ 2.50***
Class A4	65.97 plus 5.00*	2.50***
Class A3	64.97 plus 5.00*	2.50***
Class A2	62.47 plus 5.00*	2.50***
Class A1	61.47 plus 5.00*	2.50***
Class A	60.47 plus 5.00*	2.50***
Class B	58.88 plus 5.00*	2.50***
Class C	56.97 plus 5.00*	2.50***
Class D	55.34 plus 5.00*	2.50***
Class E	51.63 plus 5.00*	2.50***
Safety Engineer	61.21 plus 5.00*	2.50***
Helicopter:		
Pilot/Engineer	62.29 plus 5.00*	2.50***
Co Pilot	60.47 plus 5.00*	2.50***
Communications Engineer	60.47 plus 5.00*	2.50***
Surveying:		
Chief of Party	60.47 plus 5.00*	2.50***
Transit/Instrument Man	51.63 plus 5.00*	2.50***
Rod/Chainman	51.05 plus 5.00*	2.50***
Additional \$0.75 for Survey work Tunnel under compressed air.		
Additional \$0.50 for Hydrographic work.		

\*The \$5.00 is added to the Class Base Wage for all hours worked. Additionally, the \$5.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.



**\*\*Outside Material Hoist (Class B)** receives additional \$ 1.00 per hour on 110 feet up to 199 feet total height, \$ 2.00 per hour on 200 feet and over total height.

**\*\*\*To be allocated at a later date**

- On **HAZARDOUS WASTE REMOVAL** or **ASBESTOS REMOVAL** work, or any state or federally **DESIGNATED HAZARDOUS WASTE SITE**:

For projects bid on or before April 1, 2020...Where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection, the Operating Engineer shall receive the hourly wage plus an additional twenty percent (20%) of that wage for the entire shift.

For projects bid after April 1, 2020...On hazardous waste removal work of any kind, including state or federally designated site where the operating engineer is required to wear level A, B, or C personal protection the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour. An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$ 1.00 per hour. This shall also apply to sites where the level D personal protection is required.

### SHIFT WORK

- **SHIFT WORK**: On all Government mandated irregular or off shift work, an additional 15% on straight time hours.

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 34.00\*

\*15% premium is also required on shift work benefits

### OVERTIME PAY

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*15% premium is also required on shift work benefits

### HOLIDAY

Paid: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Holidays falling on Sunday will be celebrated on Monday.

### REGISTERED APPRENTICES

(1) year terms at the following percentage of journeyman's wage:

1st year	60% of Class base wage plus \$5.00*
2nd year	70% of Class base wage plus \$5.00*
3rd year	80% of Class base wage plus \$5.00*
4th year	90% of Class base wage plus \$5.00*

\*The \$5.00 is added to the Class Base Wage for all hours worked. Additionally, the \$5.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

Supplemental Benefits per hour:

Apprentices \$ 34.00

11-825

## Operating Engineer - Marine Dredging

10/01/2024

**JOB DESCRIPTION** Operating Engineer - Marine Dredging

**DISTRICT** 4

### ENTIRE COUNTIES

Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

### WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour: 07/01/2024

CLASS A1 \$ 45.26

Deck Captain, Leverman,  
Mechanical Dredge Operator,  
Licensed Tug Operator 1000HP or more.



CLASS A2 Crane Operator (360 swing)	40.33
CLASS B Dozer, Front Loader Operator on Land	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.
CLASS B1 Derrick Operator (180 swing) Spider/Spill Barge Operator Operator II, Fill Placer, Engineer Chief Mate, Electrician, Chief Welder, Maintenance Engineer, Licensed Boat, Crew Boat Operator	39.14
CLASS B2 Certified Welder	36.84
CLASS C1 Drag Barge Operator, Steward, Mate, Assistant Fill Placer	35.83
CLASS C2 Boat Operator	34.68
CLASS D Shoreman, Deckhand, Oiler, Rodman, Scowman, Cook, Messman, Porter/Janitor	28.81

#### **SUPPLEMENTAL BENEFITS**

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B	\$ 12.00 plus 7% of straight time wage, Overtime hours add \$ 0.63
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All Class C & D	\$ 11.75 plus 7% of straight time wage, Overtime hours add \$ 0.50
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#### **OVERTIME PAY**

See (B2, F, R) on OVERTIME PAGE

#### **HOLIDAY**

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

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### **Operating Engineer - Steel Erectors**

**10/01/2024**

**JOB DESCRIPTION** Operating Engineer - Steel Erectors

**DISTRICT** 11

#### **ENTIRE COUNTIES**

Delaware, Orange, Rockland, Sullivan, Ulster

#### **WAGES**

CLASS A3: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with a 140 ft. boom and over.

CLASS A2: Cranes, Derricks and Pile Drivers 100 tons or more and Tower Cranes, with up to a 139 ft. boom and under.

CLASS A1: Cranes, Derricks and Pile Drivers less than 100 tons with a 140 ft. boom and over.

CLASS A: Cranes, Derricks and Pile Drivers less than 100 tons with up to a 139 ft. boom and under.



CLASS B: "A" Frame; Cherry Pickers(10 tons and under); Hoists (all type Hoists, shall also include Steam, Gas, Diesel, Electric, Air Hydraulic, Single and Double Drum, Concrete, Brick Shaft Caisson, Snorkel Roof, and/or any other Similar Type Hoisting Machines, portable or stationary, except Chicago Boom Type); Jacks-Screw Air Hydraulic Power Operated Unit or Console Type (not hand Jack or Pile Load Test Type); Side Booms; Straddle Carrier

CLASS C: Aerial Platform used as Hoist; Compressors (2 or 3 in Battery); Concrete cleaning/ decontamination machine operator; Directional Boring Machines; Elevator or House Cars; Conveyers and Tugger Hoists; Fireman; Fork Lifts; Generators (2 or 3 in Battery); Heavy Equipment Robotics Operator/Technician; Master Environmental Maintenance Technician; Maintenance -Utility Man; Rod Bending Machines (Power); Captain(powerboat); Tug Master; Ultra High Pressure Waterjet Cutting Tool System; Vacuum Blasting Machine; Welding Machines(gas or electric,2 or 3 in battery, including diesels); Transfer Machine; Apprentice Engineer/Oiler with either one compressor or one welding machine when used for decontamination and remediation

CLASS D: Compressor (single); Welding Machines (Gas, Diesel, and/or Electric Converters of any type); Welding System Multiple (Rectifier Transformer type)

CLASS E: Assistant Engineer/Oiler; Maintenance Apprentice (Deck Hand);Drillers Helper; Maintenance Apprentice (Oiler); Mechanics' Helper; Transit/Instrument Man

WAGES:(per hour)

	07/01/2024	07/01/2025 Additional
Class A3	\$ 68.99 plus 5.00*	\$ 2.50**
Class A2	67.33 plus 5.00*	2.50**
Class A1	64.49 plus 5.00*	2.50**
Class A	62.83 plus 5.00*	2.50**
Class B	60.04 plus 5.00*	2.50**
Class C	57.38 plus 5.00*	2.50**
Class D	55.85 plus 5.00*	2.50**
Class E	52.09 plus 5.00*	2.50**
Vacuum Truck	60.80 plus 5.00*	2.50**
Safety Engineer	61.66 plus 5.00*	2.50**
Helicopter:		
Pilot/Engineer	64.49 plus 5.00*	2.50**
Co Pilot	64.10 plus 5.00*	2.50**
Communications Engineer	64.10 plus 5.00*	2.50**
Surveying:		
Chief of Party	60.80 plus 5.00*	2.50**
Transit/Instrument man	52.09 plus 5.00*	2.50**
Rod/Chainman	51.05 plus 5.00*	2.50**
Additional \$0.75 for Survey work Tunnels under compressed air.		
Additional \$0.50 for Hydrographic work.		

\*The \$5.00 is added to the Class Base Wage for all hours worked. Additionally, the \$5.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

\*\*To be allocated at a later date

- On HAZARDOUS WASTE REMOVAL or ASBESTOS REMOVAL work, or any state or federally DESIGNATED HAZARDOUS WASTE SITE:

For projects bid on or before April 1, 2020...Where the Operating Engineer is in direct contact with hazardous material and when personal protective equipment is required for respiratory, skin and eye protection, the Operating Engineer shall receive the hourly wage plus an additional twenty percent (20%) of that wage for the entire shift.

For projects bid after April 1, 2020...On hazardous waste removal work of any kind, including state or federally designated site where the operating engineer is required to wear level A, B, or C personal protection the operating engineer shall receive an hourly wage rate of his regular hourly wage plus \$5.00 per hour. An operating engineer working at a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A, B, or C personal protection, shall receive an hourly wage rate of his regular rate plus \$ 1.00 per hour. This shall also apply to sites where the level D personal protection is required.

#### SHIFT WORK

- SHIFT WORK: On all Government mandated irregular or off shift work, an additional 15% on straight time hours.

#### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 34.00\*



\*15% premium is also required on shift work benefits

#### OVERTIME PAY

See (B, E, Q, \*V, X) on OVERTIME PAGE

\*15% premium is also required on shift work benefits

#### HOLIDAY

Paid: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 13, 15) on HOLIDAY PAGE

Holidays falling on Sunday will be celebrated on Monday.

#### REGISTERED APPRENTICES

(1) year terms at the following percentage of journeyman's wage.

1st year	60% of Class base wage plus \$5.00*
2nd year	70% of Class base wage plus \$5.00*
3rd year	80% of Class base wage plus \$5.00*
4th year	90% of Class base wage plus \$5.00*

\*The \$5.00 is added to the Class Base Wage for all hours worked. Additionally, the \$5.00 is subject to the V-Code listed on the OVERTIME CODE Sheet.

Supplemental Benefits per hour:

Apprentices \$ 34.00

11-825SE

#### Painter

10/01/2024

#### JOB DESCRIPTION Painter

DISTRICT 1

#### ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Sullivan, Ulster

#### WAGES

Per hour	07/01/2024	05/01/2025 Additional
Brush/Paper Hanger	\$ 38.81	\$ 1.99*
Dry Wall Finisher	38.81	1.99*
Lead Abatement	38.81	1.99*
Sandblaster-Painter	38.81	1.99*
Spray Rate	39.81	1.99*

(\*) To be allocated at later date.

See Bridge Painting rates for the following work:

Structural Steel, all work performed on tanks, ALL BRIDGES, towers, smoke stacks, flag poles. Rate shall apply to all of said areas from the ground up.

#### SUPPLEMENTAL BENEFITS

Per hour

Journeyworker \$ 27.37

#### 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

Six (6) month terms at the following percentage of Journeyperson's wage

1st	2nd	3rd	4th	5th	6th
50%	55%	65%	75%	85%	95%

Supplemental Benefits per hour worked



1st term	\$ 11.39
All others	27.37

1-155

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**Painter - Bridge & Structural Steel****10/01/2024**

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**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:

Bridge Painting:	07/01/2024
	\$ 56.00
	+ 10.35*

ADDITIONAL \$7.00 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 (50 hour 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:	\$ 12.43
	+ 31.55*

\* 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 (50 hour 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.

1st year	\$ 22.40
	+ 4.14

2nd year	\$ 33.60
	+ 6.21

3rd year	\$ 44.80
	+ 8.28

Supplemental Benefits - Per hour:

1st year	\$ 1.16
	+ 12.62

2nd year	\$ 7.46
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+ 18.93

3rd year                      \$ 9.94  
                                     + 25.24

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

**Painter - Line Striping**

**10/01/2024**

**JOB DESCRIPTION** Painter - Line Striping

**DISTRICT 8**

**ENTIRE COUNTIES**

Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

**WAGES**

Per hour:

Painter (Striping-Highway):	07/01/2024	04/01/2025	04/01/2026
Striping-Machine Operator*	\$ 34.12	\$ 35.49	\$ 36.93
Linerman Thermoplastic	41.12	42.74	44.44

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.

**SHIFT WORK**

When directly specified in public agency or authority contract documents there shall be a 30% night shift premium pay differential for all work performed after 9:00pm and before 5:00am.

**SUPPLEMENTAL BENEFITS**

Per hour paid:

Journeyworker:

Striping Machine Operator:	\$23.65	\$ 24.30	\$ 24.95
Linerman Thermoplastic:	23.65	24.30	24.95

**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:

1st Term:	\$ 16.00	\$ 16.00	\$ 16.00
2nd Term:	20.47	21.29	22.16
3rd Term:	27.30	28.39	29.54

Supplemental Benefits per hour:

All terms:	\$ 23.65	\$ 24.30	\$ 24.95
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8-1456-LS

**Painter - Metal Polisher**

**10/01/2024**

**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**

	07/01/2024
Metal Polisher	\$ 39.33
Metal Polisher*	40.43
Metal Polisher**	43.33



\*Note: Applies on New Construction & complete renovation  
 \*\* Note: Applies when working on scaffolds over 34 feet.

### SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2024

Journeyworker:

All classification \$ 12.79

### 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, 11, 15, 16, 25, 26) on HOLIDAY PAGE

### REGISTERED APPRENTICES

Wages per hour:

One (1) year term at the following wage rates:

07/01/2024

1st year	\$ 19.67
2nd year	21.63
3rd year	23.60

1st year*	\$ 22.06
2nd year*	22.07
3rd year*	24.14

1st year**	\$ 22.17
2nd year**	24.13
3rd year**	26.10

\*Note: Applies on New Construction & complete renovation

\*\* Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 8.69
2nd year	8.69
3rd year	8.69

8-8A/28A-MP

### Plumber

10/01/2024

**JOB DESCRIPTION** Plumber

**DISTRICT** 11

### ENTIRE COUNTIES

Orange, Rockland, Sullivan

### PARTIAL COUNTIES

Ulster: Only the Townships of Plattekill, Marlboro, Wawarsing, and Shawangunk (except for Wallkill and Shawangunk Prisons).

### WAGES

REFRIGERATION: For commercial and industrial refrigeration which means service, maintenance, and installation work where the combined compressor tonnage does not exceed 40 tons.

AIR CONDITIONING: Air conditioning to be installed that is water cooled shall not exceed 25 tons. This will include the piping of the component system and erection of water tower. Air conditioning that is air cooled shall not exceed 50 tons.

WAGES: (per hour)

07/01/2024

05/01/2025

Additional

Plumber \$ 40.09

\$ 2.50\*

\*To be allocated at a later date

Star Certification: an additional \$ 1.00 per hour over scale will be paid to all those who have Star Certification.

### SHIFT WORK



Shift Differential: When mandated by the governmental agency, an additional 15% premium will be paid for irregular workday or for 2nd and 3rd shift.

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman

\$ 36.78\*

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

### OVERTIME PAY

See (B, G, P, \*V) on OVERTIME PAGE

\* A portion of the benefit amount is subject to the V code for overtime and shift differential work.

### HOLIDAY

Paid: See (5, 6, 13, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 13, 15, 25) on HOLIDAY PAGE

### REGISTERED APPRENTICES

(1)year terms at the following wage.

07/01/2024

1st term	\$ 18.04
2nd term	22.05
3rd term	26.06
4th term	30.07
5th term	34.08

Supplemental Benefits per hour:

Apprentices

1st term	\$ 16.62*
2nd term	20.29*
3rd term	23.95*
4th term	27.63*
5th term	31.19*

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

11-373 Refrig

## Plumber

10/01/2024

**JOB DESCRIPTION** Plumber

**DISTRICT** 11

### ENTIRE COUNTIES

Orange, Rockland, Sullivan

### PARTIAL COUNTIES

Ulster: Only the Townships of Plattekill, Marlboro, Wawarsing, and Shawangunk (except for Wallkill and Shawangunk Prisons).

### WAGES

WAGES:(per hour) 07/01/2024

Plumber/Steamfitter \$ 51.20

Note: For all work 40-60 feet above ground add \$ 0.25 per hour, over 60 feet add \$ 0.50 per hour.

### SHIFT WORK

Shift Differential: When mandated by the governmental agency, an additional 15% premium will be paid for irregular workday or for 2nd and 3rd shift.

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyman

\$ 45.57

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.

### OVERTIME PAY

See (B, E, Q, \*V) on OVERTIME PAGE

\* A portion of the benefit amount is subject to the V code for overtime and shift differential work.

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

When a holiday falls on a Saturday, the day prior shall be considered and recognized as the holiday. When a holiday falls on a Sunday, the day proceeding shall be considered and recognized as the holiday to be observed.



## REGISTERED APPRENTICES

(1) year terms at the following wages.

	07/01/2024
1st term	\$ 17.92
2nd term	23.04
3rd term	28.16
4th term	33.28
5th term	40.96

Supplemental Benefits per hour:

1st term	\$ 16.03*
2nd term	20.58*
3rd term	25.12*
4th term	29.68*
5th term	36.48*

\*For overtime or shift differential work, \$0.10 is paid at straight time, the remaining balance is paid at the same premium as the wages.  
11-373 SF

## Plumber

10/01/2024

**JOB DESCRIPTION** Plumber

**DISTRICT** 8

### ENTIRE COUNTIES

Dutchess

### PARTIAL COUNTIES

Delaware: Only the Townships of Middletown and Roxbury.

Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

### WAGES

Per hour:	07/01/2024
Plumber & Steamfitter	\$ 59.35

### SHIFT WORK

SHIFT WORK:

When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

### SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker: \$ 43.61

### OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

## REGISTERED APPRENTICES

(1)year terms at the following rates:

	07/01/2024
1st year	\$ 22.71
2nd year	31.32
3rd year	36.34
4th year	43.55
5th year	50.12

Supplemental Benefits per hour:

1st year	\$ 18.45
2nd year	23.62
3rd year	27.42
4th year	31.72
5th year	35.00

8-21.2-SF



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**Plumber - HVAC / Service****10/01/2024**

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**JOB DESCRIPTION** Plumber - HVAC / Service**DISTRICT** 8**ENTIRE COUNTIES**

Dutchess, Putnam, Westchester

**PARTIAL COUNTIES**

Delaware: Only the townships of Middletown and Roxbury

Ulster: Entire County(including Wallkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

**WAGES**

Per hour: 07/01/2024

HVAC Service \$ 43.43  
+ \$ 4.47\*

\*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

**SUPPLEMENTAL BENEFITS**

Per hour:

Journeyworker HVAC Service  
\$ 30.39**OVERTIME PAY**

See (B, F, R) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

HVAC SERVICE

(1)year terms at the following wages:

1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
\$ 19.66	\$ 23.32	\$ 29.05	\$ 35.73	\$ 38.83
+\$2.43*	+\$2.76*	+\$3.31*	+\$3.96*	+\$4.21*

\*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices 07/01/2024

1st term	\$ 21.47
2nd term	23.05
3rd term	24.76
4th term	27.13
5th term	28.81

8-21.1&amp;2-SF/Re/AC

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**Plumber - Jobbing & Alterations****10/01/2024**

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**JOB DESCRIPTION** Plumber - Jobbing & Alterations**DISTRICT** 8**ENTIRE COUNTIES**

Dutchess, Putnam, Westchester

**PARTIAL COUNTIES**

Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

**WAGES**

Per hour: 07/01/2024

Journeyworker: \$ 49.63

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

**SHIFT WORK**



When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

#### SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker

\$ 36.44

#### OVERTIME PAY

See (B, \*E, E2, Q, V) on OVERTIME PAGE

\*When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

#### HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

#### REGISTERED APPRENTICES

(1) year terms at the following wages:

1st year	\$ 21.35
2nd year	23.73
3rd year	25.87
4th year	36.28
5th year	38.34

Supplemental Benefits per hour:

1st year	\$ 12.11
2nd year	14.21
3rd year	18.38
4th year	24.86
5th year	26.96

8-21.3-J&A

#### Roofer

10/01/2024

**JOB DESCRIPTION** Roofer

**DISTRICT** 9

#### ENTIRE COUNTIES

Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

#### WAGES

Per Hour: 07/01/2024

Roofer/Waterproofer \$ 48.50  
+ \$7.00\*

\* This portion is not subjected to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

#### SUPPLEMENTAL BENEFITS

Per Hour: \$ 31.87

#### OVERTIME PAY

See (B, H) on OVERTIME PAGE

Note: An observed holiday that falls on a Sunday will be observed the following Monday.

#### HOLIDAY

Overtime: See (5, 6) on HOLIDAY PAGE

#### REGISTERED APPRENTICES

( 1 ) year term apprentices indentured prior to 01/01/2023

1st	2nd	3rd	4th
\$ 16.97	\$ 24.25	\$ 29.10	\$ 36.37
	+ 3.50*	+ 4.20*	+ 5.26*

Supplements:

1st	2nd	3rd	4th
\$ 4.10	\$ 16.17	\$ 19.31	\$ 24.02

\* This portion is not subjected to overtime premiums.

(1) year term apprentices indentured after 01/01/2023



	1st	2nd	3rd	4th	5th
	\$ 18.43	\$ 21.82	\$ 24.25	\$ 29.10	\$ 36.37
		+ 3.16*	+ 3.50*	+ 4.20*	+ 5.26
Supplements:					
	1st	2nd	3rd	4th	5th
	\$ 7.73	\$ 14.59	\$ 16.17	\$ 19.31	\$ 24.02

\* This portion is not subjected to overtime premiums.

9-8R

<b>Sheetmetal Worker</b>	<b>10/01/2024</b>
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**JOB DESCRIPTION** Sheetmetal Worker

**DISTRICT** 8

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

	07/01/2024
SheetMetal Worker	\$ 49.51
	+ 3.71*

\*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

**SHIFT WORK**

For all NYS D.O.T. and other Governmental mandated off-shift work:  
10% increase for additional shifts for a minimum of five (5) days

**SUPPLEMENTAL BENEFITS**

Journeyworker \$ 46.20

**OVERTIME PAY**

OVERTIME:.. See ( B, E, Q, ) on OVERTIME PAGE.

**HOLIDAY**

Paid: See (1) on HOLIDAY PAGE  
Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE

**REGISTERED APPRENTICES**

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 20.20	\$ 20.81	\$ 23.12	\$ 25.42	\$ 27.74	\$ 30.08	\$ 32.86	\$ 35.63
+ 1.48*	+ 1.67*	+ 1.86*	+ 2.04*	+ 2.23*	+ 2.41*	+ 2.60*	+ 2.78*

\*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices	
1st term	\$ 18.07
2nd term	22.24
3rd term	24.71
4th term	27.21
5th term	29.67
6th term	32.12
7th term	34.12
8th term	36.15

8-38

<b>Sprinkler Fitter</b>	<b>10/01/2024</b>
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**JOB DESCRIPTION** Sprinkler Fitter

**DISTRICT** 1

**ENTIRE COUNTIES**

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

**WAGES**

Per hour 07/01/2024

Sprinkler \$ 53.34  
Fitter

**SUPPLEMENTAL BENEFITS**

Per hour



Journeyworker \$ 30.77

### 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
\$ 25.89	\$ 28.77	\$ 31.39	\$ 34.27	\$ 37.14	\$ 40.02	\$ 42.90	\$ 45.77	\$ 48.65	\$ 51.53

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 9.18	\$ 9.18	\$ 20.90	\$ 20.90	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15
1-669.2									

### Teamster - Building / Heavy&Highway

10/01/2024

**JOB DESCRIPTION** Teamster - Building / Heavy&Highway

**DISTRICT** 11

### ENTIRE COUNTIES

Dutchess, Orange, Rockland, Sullivan, Ulster

### WAGES

GROUP 1: LeTourneau Tractors, Double Barrel Euclids, Athney Wagons and similar equipment (except when hooked to scrapers), I-Beam and Pole Trailers, Tire Trucks, Tractor and Trailers with 5 axles and over, Articulated Back Dumps and Road Oil Distributors, Articulated Water Trucks and Fuel Trucks/Trailers, positions requiring a HAZMAT CDL endorsement.

GROUP 1A: Drivers on detachable Gooseneck Low Bed Trailers rated over 35 tons.

GROUP 2: All equipment 25 yards and up to and including 30-yard bodies and cable Dump Trailers and Powder and Dynamite Trucks.

GROUP 3: All Equipment up to and including 24-yard bodies, Mixer Trucks, Dump Crete Trucks and similar types of equipment, Fuel Trucks, Batch Trucks and all other Tractor Trailers, Hi-Rail Truck.

GROUP 4: Tri-Axles, Ten Wheelers, Grease Trucks, Tillerman, Pattern Trucks, Attenuator Trucks, Water Trucks, Bus.

GROUP 5: Straight Trucks.

GROUP 6: Pick-up Trucks for hauling materials and parts, and Escort Man over-the-road.

WAGES: (per hour) 07/01/2024

GROUP 1	\$ 34.58
GROUP 1A	35.72
GROUP 2	34.02
GROUP 3	33.80
GROUP 4	33.69
GROUP 5	33.57
GROUP 6	33.57

### NOTE ADDITIONAL PREMIUMS:

- Employees engaged in hazardous/toxic waste removal, on a State or Federally designated hazardous/toxic waste site, where the employee comes in contact with hazardous/toxic waste material and when personal protective equipment is required for respiratory, skin, or eye protection, the employee shall receive an additional 20% premium above the hourly wage.

### SHIFT WORK

- On projects requiring an irregular shift a premium of 10% will be paid on wages. The premium will be paid for off-shift or irregular shift work when mandated by Governmental Agency.

### SUPPLEMENTAL BENEFITS



Per hour:  
First 40 hours \$ 44.59  
Over 40 hours 36.99

**OVERTIME PAY**

See (\*B, E, \*\*E2, \*\*\*P, X) on OVERTIME PAGE

\*Holidays worked Monday through Friday receive Double Time (2x) after 8 hours.

\*\*Makeup day limited to the employees who were working on the site that week.

\*\*\*Sunday Holidays are paid at a rate of double time and one half (2.5x) for all hours worked.

**HOLIDAY**

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (\*1) on HOLIDAY PAGE

- Any employee working two (2) days in any calendar week during which a holiday occurs shall receive a days pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday or Sunday.

\*See OVERTIME PAY section for when additional premium is applicable on Holiday hours worked.

11-445B/HH

**Teamster - Delivery - Building / Heavy&Highway**

**10/01/2024**

**JOB DESCRIPTION** Teamster - Delivery - Building / Heavy&Highway

**DISTRICT** 11

**ENTIRE COUNTIES**

Dutchess, Orange, Rockland, Sullivan, Ulster

**WAGES**

Group 1 Tractor Trailer Drivers  
Group 2 Tri- Axle

Wages: 07/01/2024

Group 1 \$ 33.70  
Group 2 29.70

Hazardous/Toxic Waste Removal additional 20% when personal protective equipment is required.

**SUPPLEMENTAL BENEFITS**

Per hour paid:

First 40 hours \$ 32.30  
Over 40 hours 0.00

**OVERTIME PAY**

See (B, E, Q, X) on OVERTIME PAGE

**HOLIDAY**

Paid: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 13, 15, 16, 20, 22, 25, 26) on HOLIDAY PAGE

- Employee must work either the scheduled day of work before or the scheduled day of work after the holiday in the workweek.

- Any employee working one (1) day in the calendar week during which a holiday occurs shall receive a day's pay for each holiday occurring during said week. This provision shall also apply if a holiday falls on a Saturday.

- When any of the recognized holidays occur on Sunday and are celebrated any day before or after the holiday Sunday, such days shall be considered as the holiday and paid for as such.

11-445 B/HH Delivery

**Welder**

**10/01/2024**

**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, Schoenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

**WAGES**

Per hour 07/01/2024

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**







## 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 12226**

**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

☐ 10 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

- ☐ Fuel Delivery  
☐ Guards, Watchmen  
☐ Janitors, Porters, Cleaners,  
Elevator Operators  
☐ Moving furniture and  
equipment  
☐ Trash and refuse removal  
☐ Window cleaners  
☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

**Signature**





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://apps.labor.ny.gov/EDList/searchPage.do>

**For inquiries please call 518-457-5589.**







**NYSDOL Bureau of Public Work Debarment List     09/20/2024**

**Article 8**

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5754	0369 CONTRACTORS, LLC		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
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 GARCIA		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ARADCO CONSTRUCTION CORP		115-46 132RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
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	NYC		AVM CONSTRUCTION CORP		117-72 123RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL		B&L RENOVATION CO.		618 OCEAN PARKWAY APT A6BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	DOL		BERNARD BEGLEY		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL	*****3627	BJB CONSTRUCTION CORP.		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
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	*****4083	C.P.D. ENTERPRISES, INC		P.O BOX 281 WALDEN NY 12586	03/03/2020	03/03/2025
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
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTI ON	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG	*****7247	CENTURY CONCRETE CORP		2375 RAYNOR ST RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	NYC		CHARLES ZAHRAKKA		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025
DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026



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DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
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	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	AG		EDWIN HUTZLER		23 NORTH HOWELLS RD BELLPORT NY 11713	08/04/2021	08/04/2026
DOL	DA		EDWIN HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		FREDERICK HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	NYC		GAYATRI MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027



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DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
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	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN MARKOVIC		47 MANDON TERRACE HAWTHORN NJ 07506	03/29/2021	03/29/2026
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028



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DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
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		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
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	*****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	DOL		MAQSOOD AHMAD		618 OCEAN PKWY BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	NYC		MARIA NUBILE		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
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	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		NAMOW, INC.		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028



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DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTI ON, INC.	444 SCHANTZ ROAD ALLEN TOWN PA 18104	09/17/2020	09/17/2025
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PETER STEVENS		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
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	07/11/2022	07/11/2027
DOL	DA	*****7559	REGAL CONTRACTING INC.		24 WOODBINE AVE NORTHPORT NY 11768	10/01/2020	10/01/2025
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL		ROBBYE BISSEAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DOL		SAL FRESINA MASONRY CONTRACTORS, INC.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL		SAL MASONRY CONTRACTORS, INC.		(SEE COMMENTS) SYRACUSE NY 13202	07/16/2021	07/16/2026
DOL	DOL	*****9874	SALFREE ENTERPRISES INC		P.O BOX 14 2821 GARDNER RD POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		SALVATORE A FRESINA A/K/A SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DOL		SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****1130	SCANA CONSTRUCTION CORP.		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025



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DOL	DOL	*****2045	SCOTT DUFFIE	DUFFIE'S ELECTRIC, INC.	P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DOL		SCOTT DUFFIE		P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DOL	*****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	NYC		SOMATIE RAMSUNAHAI		115-46 132ND ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
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	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL	*****3800	SUBURBAN RESTORATION CO. INC.		5-10 BANTA PLACE FAIR LAWN PLACE NJ 07410	03/29/2021	03/29/2026
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL	*****9733	TERSAL CONSTRUCTION SERVICES INC		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13208	07/16/2021	07/16/2026
DOL	DOL		TERSAL CONTRACTORS, INC.		221 GARDNER RD P.O BOX 14POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		TERSAL DEVELOPMENT CORP.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DA	*****4106	TRIPLE H CONCRETE CORP		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****2426	VICKRAM MANGRU	VICK CONSTRUCTION	21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	NYC		VICKRAM MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM G. PROERFRIEDT		85 SPRUCEWOOD ROAD WEST BABYLON NY 11704	01/19/2021	01/19/2026
DOL	DOL	*****5924	WILLIAM G. PROPHY, LLC	WGP CONTRACTING, INC.	54 PENTAQUIT AVE BAYSHORE NY 11706	01/19/2021	01/19/2026
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029



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**Article 8**

DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
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## **SECTION 01 08 00 - GENERAL COMMISSIONING REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Owner's Project Requirements and Basis-of-Design documentation are included by reference for information only.

#### **1.2 SUMMARY**

**A. Section Includes:**

1. General requirements for coordinating and scheduling commissioning.
2. Commissioning meetings.
3. Commissioning reports.
4. Test equipment, instrumentation, and tools (including, but not limited to, proprietary test equipment, instrumentation, and tools) required to perform tests.
5. Use of test equipment, instrumentation, and tools for commissioning.
6. Construction checklist requirements, including, but not limited to, installation checks, startup, performance tests, and performance test demonstration.
7. Commissioning tests and commissioning test demonstration.
8. Adjusting, verifying, and documenting identified systems and assemblies.
9. Work to correct commissioning issues.
10. Work to repeat tests when equipment and systems fail acceptance criteria.

**B. Related Requirements:**

1. Section 01 33 00 "Submittal Procedures" for submittal procedures requirements for commissioning.
2. Section 01 77 00 "Closeout Procedures" for certificate of Construction Phase Commissioning Completion submittal requirements.
3. Section 01 78 23 "Operation and Maintenance Data" for preliminary operation and maintenance data submittal.
4. Individual Technical Specifications and Drawings: Equipment and systems design and installation, startup, field quality-control testing, and additional requirements indicated in the Contract Documents.

#### **1.3 DEFINITIONS**

- A. Acceptance Criteria: Threshold of acceptable work quality or performance specified for a commissioning activity, including, but not limited to, construction checklists, performance tests, performance test demonstrations, commissioning tests and commissioning test demonstrations.



- B. Basis-of-Design Document: A document prepared by Owner, Architect, or Commissioning Authority that records concepts, calculations, decisions, and product selections used to comply with Owner's Project Requirements and to suit applicable regulatory requirements, standards, and guidelines.
- C. Commissioning Authority: An entity engaged by Owner, and identified in Section 01 10 00 "Summary of Work," to evaluate Commissioning-Process Work.
- D. Commissioning Plan: A document, prepared by Commissioning Authority, that outlines the organization, schedule, allocation of resources, and documentation requirements of commissioning.
- E. Commissioning: A quality-focused process for verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, and tested to comply with Owner's Project Requirements. The requirements specified here are limited to the construction phase commissioning activities. The scope of commissioning is defined in Section 01 10 00 "Summary of Work."
- F. Construction Phase Commissioning Completion: The stage of completion and acceptance of commissioning when resolution of deficient conditions and issues discovered during commissioning and retesting until acceptable results are obtained has been accomplished. Owner will establish in writing the date Construction Phase Commissioning Completion is achieved. See Section 01 77 00 "Closeout Procedures" for certificate of Construction Phase Commissioning Completion submittal requirements.
  - 1. Commissioning is complete when the work specified in this Section and related Sections has been completed and accepted, including, but not limited to, the following:
    - a. Completion of tests and acceptance of test results.
    - b. Resolution of issues, as verified by retests performed and documented with acceptance of retest results.
    - c. Comply with requirements in Section 01 79 00 "Demonstration and Training."
    - d. Completion and acceptance of submittals and reports.
- G. Owner's Project Requirements: A document written by Owner, Architect, or Commissioning Authority that details the functional requirements of a project and the expectations of how it will be used and operated, including Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
- H. Owner's Witness: Commissioning Authority, Owner's Project Manager, or Architect-designated witness authorized to authenticate test demonstration data and to sign completed test data forms.
- I. "Systems," "Assemblies," "Subsystems," "Equipment," and "Components": Where these terms are used together or separately, they shall mean "as-built" systems, assemblies, subsystems, equipment, and components.
- J. Test: Performance tests, performance test demonstrations, commissioning tests, and commissioning test demonstrations.



- K. Sampling Procedures and Tables for Inspection by Attributes: As defined in ASQ Z1.4.

#### 1.4 COMPENSATION

- A. Should Architect, Commissioning Authority, other Owner's witness, or Owner's staff perform additional services or incur additional expenses due to actions of Contractor listed below, compensate Owner for such additional services and expenses.
  - 1. Failure to provide timely notice of commissioning activities schedule changes.
  - 2. Failure to meet acceptance criteria for test demonstrations.
- B. Contractor shall compensate Owner for such additional services and expenses at the rate of \$175.00 per labor hour plus the current per mile rate for personnel travelling plus per diem allowances for meals and lodging according to current U.S. General Services Administration (GSA) Per Diem Rates.

#### 1.5 COMMISSIONING TEAM

- A. Members Appointed by Contractor(s):
  - 1. Commissioning Coordinator: A person or entity employed by Contractor to manage, schedule, and coordinate commissioning.
  - 2. Project superintendent and other employees that Contractor may deem appropriate for a particular portion of the commissioning.
  - 3. Subcontractors, installers, suppliers, and specialists that Contractor may deem appropriate for a particular portion of the commissioning.
  - 4. Appointed team members shall have the authority to act on behalf of the entity they represent.
- B. Members Appointed by Owner:
  - 1. Commissioning Authority, plus consultants that Commissioning Authority may deem appropriate for a particular portion of the commissioning.
  - 2. Owner representative(s), facility operations and maintenance personnel, plus other employees, separate contractors, and consultants that Owner may deem appropriate for a particular portion of the commissioning.
  - 3. Architect / Engineer, plus employees and consultants that Architect may deem appropriate for a particular portion of the commissioning.

#### 1.6 SUBMITTALS

- A. Comply with requirements in Section 01 33 00 "Submittal Procedures" for submittal procedures general requirements for commissioning.



B. Commissioning Plan Information:

1. List of Contractor-appointed commissioning team members to include specific personnel and subcontractors to the performance of the various commissioning requirements.
2. Schedule of commissioning activities, integrated with the construction schedule. Comply with requirements in Section 01 32 00 "Construction Progress Documentation" for construction schedule general requirements for commissioning.
3. Contractor personnel and subcontractors to participate in each test.
4. List of instrumentation required for each test to include identification of parties that will provide instrumentation for each test.

C. Commissioning Coordinator Letter of Authority:

1. Within 10 days after approval of Commissioning Coordinator qualifications, submit a letter of authority for Commissioning Coordinator, signed by a principal of Contractor's firm. Letter shall authorize Commissioning Coordinator to do the following:
  - a. Make inspections required for commissioning.
  - b. Coordinate, schedule, and manage commissioning of Contractor, subcontractors, and suppliers.
  - c. Obtain documentation required for commissioning from Contractor, subcontractors, and suppliers.
  - d. Report issues, delayed resolution of issues, schedule conflicts, and lack of cooperation or expertise on the part of members of the commissioning team.

D. Commissioning Coordinator Qualification Data: For entity coordinating Contractor's commissioning activities to demonstrate their capabilities and experience.

1. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of 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.

E. Commissioning schedule.

F. Two-week look-ahead schedules.

G. List test instrumentation, equipment, and monitoring devices. Include the following information:

1. Make, model, serial number, and application for each instrument, equipment, and monitoring device.
2. Brief description of intended use.



3. Calibration record showing the following:
  - a. Calibration agency, including name and contact information.
  - b. Last date of calibration.
  - c. Range of values for which calibration is valid.
  - d. Certification of accuracy.
  - e. N.I.S.T. traceability certification for calibration equipment.
  - f. Due date of the next calibration.

H. Construction Checklists:

1. Material checks.
2. Installation checks.
3. Startup procedures, where required.

I. Test Reports:

1. Pre-Startup Report: Prior to start up of equipment or a system, submit signed, completed construction checklists.
2. Test Data Reports: At the end of each day in which tests are conducted, submit test data for tests performed.
3. Commissioning Issues Reports: Daily, at the end of each day in which tests are conducted, submit commissioning issue reports for tests for which acceptable results were not achieved.
4. Weekly Progress Report: Weekly, at the end of each week in which tests are conducted, submit a progress report.
5. Data Trend Logs: Submit data trend logs at the end of the trend log period.
6. System Alarm Logs: Daily, at the start of days following a day in which tests were performed, submit print-out of log of alarms that occurred since the last log was printed.

## 1.7 CLOSEOUT SUBMITTALS

A. Commissioning Report:

1. At Construction Phase Commissioning Completion, include the following:
  - a. Pre-startup reports.
  - b. Approved test procedures.
  - c. Test data forms, completed and signed.
  - d. Progress reports.
  - e. Commissioning issues report log.
  - f. Commissioning issues reports showing resolution of issues.
  - g. Correspondence or other documents related to resolution of issues.
  - h. Other reports required by commissioning.



- i. List unresolved issues and reasons they remain unresolved and should be exempted from the requirements for Construction Phase Commissioning Completion.
  - j. Report shall include commissioning work of Contractor.
- B. Request for Certificate of Construction Phase Commissioning Completion.
- C. Operation and Maintenance Data: For proprietary test equipment, instrumentation, and tools to include in operation and maintenance manuals.

## 1.8 QUALITY ASSURANCE

### A. Commissioning Coordinator Qualifications:

- 1. Certification of commissioning process expertise. The following certifications are acceptable upon receipt of information demonstrating that certification is current and in good standing. Owner reserves the right to accept or reject other certifications as evidence of qualification.
  - a. Certified Commissioning Professional, by Building Commissioning Association.
  - b. Certified Building Commissioning Professional, by Association of Energy Engineers.
  - c. Existing Building Commissioning Professional, by Association of Energy Engineers.
  - d. Commissioning Process Management Professional, by American Society of Heating, Refrigerating and Air-Conditioning Engineers.
  - e. Accredited Commissioning Process Authority Professional, by University of Wisconsin.
  - f. Accredited Commissioning Process Manager, by University of Wisconsin.
  - g. Accredited Green Commissioning Process Provider, by University of Wisconsin.
- 2. Absent one of the certifications above, provide documented experience on at least three projects of similar scope and complexity commissioning systems of similar complexity to those contained in these documents. Provide written references from the lead Commissioning Authority of each project attesting to applicant experience, responsibilities, and proven capabilities in regards to commissioning being equal to those required to gain one of the listed certifications. Each reference must be certified in accordance with the above requirements.

- B. Calibration Agency Qualifications: Certified by The American Association of Laboratory Accreditation that the calibration agency complies with minimum requirements of ISO/IEC 17025.

## 1.9 COMMISSIONING AUTHORITY'S RESPONSIBILITIES

- A. Commissioning Authority Responsibilities: Comply with requirements in Section 01 10 00 "Summary of Work."



## PART 2 - PRODUCTS

### 2.1 TEST EQUIPMENT, INSTRUMENTATION, AND TOOLS

- A. Test equipment and instrumentation required to perform the commissioning shall remain the property of Contractor unless otherwise indicated.
- B. Test equipment and instrumentation required to perform commissioning shall comply with the following criteria:
  - 1. Be manufactured for the purpose of testing and measuring tests for which they are being used and have an accuracy to test and measure system performance within the tolerances required to determine acceptable performance.
  - 2. Calibrated and certified.
    - a. Calibration performed and documented by a qualified calibration agency according to national standards applicable to the tools and instrumentation being calibrated. Calibration shall be current according to national standards or within test equipment and instrumentation manufacturer's recommended intervals, whichever is more frequent, but not less than within six months of initial use on Project. Calibration tags permanently affixed.
    - b. Repair and recalibrate test equipment and instrumentation if dismantled, dropped, or damaged since last calibrated.
  - 3. Maintain test equipment and instrumentation.
  - 4. Use test equipment and instrumentation only for testing or monitoring Work for which they are designed.

### 2.2 PROPRIETARY TEST EQUIPMENT, INSTRUMENTATION, AND TOOLS

- A. Proprietary test equipment, instrumentation, and tools are those manufactured or prescribed by tested equipment manufacturer and required for work on its equipment as a condition of equipment warranty, or as otherwise required to service, repair, adjust, calibrate, or perform work on its equipment.
  - 1. Identify proprietary test equipment, instrumentation, and tools required in the test equipment identification list submittal.
  - 2. Proprietary test equipment, instrumentation, and tools shall become the property of Owner at Substantial Completion.

### 2.3 REPORT FORMAT AND ORGANIZATION

- A. General Format and Organization:
  - 1. Record report on compact disk.



2. Electronic Data: Portable document format (PDF); a single file with outline-organized bookmarks for major and minor tabs and tab contents itemized for specific reports.
- B. Commissioning Report:
1. Include a table of contents and an index to each test.
  2. Include major tabs for each Specification Section.
  3. Include minor tabs for each test.
  4. Within each minor tab, include the following:
    - a. Test specification.
    - b. Pre-startup reports.
    - c. Approved test procedures.
    - d. Test data forms, completed and signed.
    - e. Commissioning issue reports, showing resolution of issues, and documentation related to resolution of issues pertaining to a single test. Group data forms, commissioning issue reports showing resolution of issues, and documentation related to resolution of issues for each test repetition together within the minor tab, in reverse chronological order (most recent on top).

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Review preliminary construction checklists and preliminary test procedures and data forms.

### 3.2 CONSTRUCTION CHECKLISTS

- A. Construction checklists cannot modify or conflict with the Contract Documents.
- B. Create construction checklists based on actual systems and equipment to be included in Project.
- C. Material Checks: Compare specified characteristics and approved submittals with materials as received. Include factory tests and other evaluations, adjustments, and tests performed prior to shipment, if applicable.
1. Services connection requirements, including configuration, size, location, and other pertinent characteristics.
  2. Included optional features.



3. Delivery Receipt Check: Inspect and record physical condition of materials and equipment on delivery to Project site, including agreement with approved submittals, cleanliness and lack of damage.
- D. Installation Checklists: must in general document that equipment and systems are installed and started in accordance with the contract document requirements. See attachment #1 for sample checklists for a small group of representative equipment. Develop checklists in similar format with line items required designed to insure proper installation by installers:
1. Location according to Drawings and approved Shop Drawings.
  2. Configuration.
  3. Compliance with manufacturers' written installation instructions.
  4. Attachment to structure.
  5. Access clearance to allow for maintenance, service, repair, removal, and replacement without the need to disassemble or remove other equipment or building elements. Access coordinated with other building elements and equipment, including, but not limited to, ceiling and wall access panels, in a manner consistent with OSHA fall-protection regulations and safe work practices.
  6. Utility connections are of the correct characteristics, as applicable.
  7. Correct labeling and identification.
- E. Startup Checks: Verify readiness of equipment to be energized. Include manufacturer's standard startup procedures and forms.
- F. Startup: Perform and document initial operation of equipment to prove that it is installed properly and operates as intended according to manufacturer's standard startup procedures, minimum.
- G. Performance Tests:
1. Static Tests: As specified elsewhere, including, but not limited to, duct and pipe leakage tests, insulation-resistance tests, and water-penetration tests.
  2. Component Performance Tests: Tests evaluate the performance of an input or output of components under a full range of operating conditions.
  3. Equipment and Assembly Performance Tests: Test and evaluate performance of equipment and assemblies under a full range of operating conditions and loads.
  4. System Performance Tests: Test and evaluate performance of systems under a full range of operating conditions and loads.
  5. Intersystem Performance Tests: Test and evaluate the interface of different systems under a full range of operating conditions and loads.



- H. Deferred Construction Checklists: Obtain Owner approval of proposed deferral of construction checklists, including proposed schedule of completion of each deferred construction checklist, before submitting request for Certificate of Construction Phase Commissioning Completion. When approved, deferred construction checklists may be completed after date of Construction Phase Commissioning Completion. Include the following in request for Certificate of Construction Phase Commissioning Completion:
  - 1. Identify deferred construction checklists by number and title.
  - 2. Provide a target schedule for completion of deferred construction checklists.
  - 3. Written approval of proposed deferred construction checklists, including approved schedule of completion of each deferred construction checklist.
- I. Delayed Construction Checklists: Obtain Owner approval of proposed delayed construction checklists, including proposed schedule of completion of each delayed construction checklist, before submitting request for Certificate of Construction Phase Commissioning Completion. When approved, delayed construction checklists may be completed after date of Construction Phase Commissioning Completion. Include the following in request for Certificate of Construction Phase Commissioning Completion:
  - 1. Identify delayed construction checklist by construction checklist number and title.
  - 2. Provide a target schedule for completion of delayed construction checklists.
  - 3. Written approval of proposed delayed construction checklists, including approved schedule of completion of each delayed construction checklist.

### 3.3 GENERAL EXECUTION REQUIREMENTS

- A. Schedule and coordinate commissioning with the construction schedule.
- B. Perform activities identified in construction checklists, including tests, and document results of actions as construction proceeds.
- C. Perform test demonstrations for Owner's witness. Unless otherwise indicated in specific testing requirements, demonstrate tests for 100 percent of work to which the test applies.
- D. Report test data and commissioning issue resolutions.
- E. Schedule personnel to participate in and perform Commissioning-Process Work.
- F. Installing contractors' commissioning responsibilities include, but are not limited to, the following:
  - 1. Operating the equipment and systems they install during tests.
  - 2. In addition, installing contractors may be required to assist in tests of equipment and systems with which their work interfaces.



### 3.4 COMMISSIONING COORDINATOR RESPONSIBILITIES

- A. Management and Coordination: Manage, schedule, and coordinate commissioning, including, but not limited to, the following:
1. Coordinate with subcontractors on their commissioning responsibilities and activities.
  2. Obtain, assemble, and submit commissioning documentation.
  3. Attend periodic on-site commissioning meetings. Comply with requirements in Section 01 31 00 "Project Management and Coordination."
  4. Develop and maintain the commissioning schedule. Integrate commissioning schedule into the construction schedule. Update schedule at specified intervals.
  5. Review and comment on preliminary test procedures and data forms.
  6. Report inconsistencies and issues in system operations.
  7. Verify that tests have been completed and results comply with acceptance criteria, and that equipment and systems are ready before scheduling test demonstrations.
  8. Direct and coordinate test demonstrations.
  9. Coordinate witnessing of test demonstrations by Owner's witness.
  10. Coordinate and manage training. Be present during training sessions to direct video recording, present training and direct the training presentations of others. Comply with requirements in Section 01 79 00 "Demonstration and Training."
  11. Prepare and submit specified commissioning reports.
  12. Track commissioning issues until resolution and retesting is successfully completed.
  13. Retain original records of Commissioning-Process Work, organized as required for the commissioning report. Provide Owner's representative access to these records on request.
  14. Assemble and submit commissioning report.

### 3.5 COMMISSIONING TESTING

- A. Quality Control: Construction checklists, including tests, are quality-control tools designed to improve the functional quality of Project. Test demonstrations evaluate the effectiveness of Contractor's quality-control process.
- B. Owner's witness will be present to witness commissioning work requiring the signature of an owner's witness, including, but not limited to, test demonstrations. Owner's project manager will coordinate attendance by Owner's witness with Contractor's published commissioning schedule. Owner's witness will provide no labor or materials in the commissioning work. The only function of Owner's witness will be to observe and comment on the progress, completion, and results of commissioning.



C. Construction Checklists:

1. Complete construction checklists as Work is completed.
2. Distribute construction checklists to installers before they start work.
3. Installers:
  - a. Verify installation using approved construction checklists as Work proceeds.
  - b. Complete and sign construction checklists daily for work performed during the preceding day.
4. Provide Commissioning Authority access to construction checklists.

D. Installation Compliance Issues: Record as an installation compliance issue Work found to be incomplete, inaccessible, at variance with the Contract Documents, nonfunctional, or that does not comply with construction checklists. Record installation compliance issues on the construction checklist at the time they are identified. Record corrective action and how future Work should be modified before signing off the construction checklist.

E. Pre-Startup Audit: Prior to executing startup procedures, review completed installation checks to determine readiness for startup and operation. Report conditions, which, if left uncorrected, adversely impact the ability of systems or equipment to operate satisfactorily or to comply with acceptance criteria. Prepare pre-startup report for each system.

F. Test Procedures and Test Data Forms:

1. Test procedures shall define the step-by-step procedures to be used to execute tests and test demonstrations.
2. Test procedures shall be specific to the make, model, and application of the equipment and systems being tested.
3. Completed test data forms are the official records of the results of tests.
4. Commissioning Authority will provide to Contractor preliminary test procedures and test data forms for performance tests and commissioning tests after approval of Product Data, Shop Drawings, and preliminary operation and maintenance manual. Test procedures will in general be designed to demonstrate that operating characteristics conform to any or all required and / or approved performance characteristics.
5. Review preliminary test procedures and test data forms and provide comments within 14 days of receipt from Commissioning Authority. Review shall address the following:
  - a. Equipment protection and warranty issues, including, but not limited to, manufacturers' installation and startup recommendations, and operation and maintenance instructions.



- b. Applicability of the procedure to the specific software, equipment, and systems approved for installation.
  6. After Contractor has reviewed and commented on the preliminary test procedures and test data forms, Commissioning Authority will revise and reissue the approved revised test procedures and test data forms marked "Approved for Testing."
  7. Use only approved test procedures and test data forms marked "Approved for Testing" to perform and document tests and test demonstrations.
- G. Performance of Tests:
1. The sampling rate for tests is 100 percent. The sampling rate for test demonstrations is 100 percent unless otherwise indicated.
  2. Perform and complete each step of the approved test procedures in the order listed.
  3. Record data observed during performance of tests on approved data forms at the time of test performance and when the results are observed.
  4. Record test results that are not within the range of acceptable results on commissioning issue report forms in addition to recording the results on approved test procedures and data forms according to the "Commissioning Compliance Issues" Paragraph in this Article.
  5. On completion of a test, sign the completed test procedure and data form. Tests for which test procedures and data forms are incomplete, not signed, or which indicate performance that does not comply with acceptance criteria will be rejected. Tests for which test procedures and data forms are rejected shall be repeated and results resubmitted.
- H. Performance of Test Demonstration:
1. Perform test demonstrations on a sample of tests after test data submittals are approved. The sampling rate for test demonstrations shall be 100 percent of components which are not typical of at least 10, and shall be 25% of components which are typical of at least 10, unless otherwise indicated in the individual test specification.
  2. Notify Owner's witness at least seven days in advance of each test demonstration.
  3. Perform and complete each step of the approved test procedures in the order listed.
  4. Record data observed during performance of test demonstrations on approved data forms at the time of demonstration and when the results are observed.
  5. Provide full access to Owner's witness to directly observe the performance of all aspects of system response during the test demonstration. On completion of a test demonstration, sign the completed data form and obtain signature of Owner's witness at the time of the test to authenticate the reported results.



6. Test demonstration data forms not signed by Contractor and Owner's witness at the time of the completion of the procedure will be rejected. Test demonstrations for which data forms are rejected shall be repeated and results shall be resubmitted.
  - a. Exception for Failure of Owner's Witness to Attend: Failure of Owner's witness to be present for agreed-on schedule of test demonstration shall not delay Contractor. If Owner's witness fails to attend a scheduled test, Contractor shall proceed with the scheduled test. On completion, Contractor shall sign the data form for Contractor and for Owner's witness, and shall note the absence of Owner's witness at the scheduled time and place.
7. False load test requirements are specified in related sections.
  - a. Where false load testing is specified, provide temporary equipment, power, controls, wiring, piping, valves, and other necessary equipment and connections required to apply the specified load to the system. False load system shall be capable of steady-state operation and modulation at the level of load specified. Equipment and systems permanently installed in this work shall not be used to create the false load without Architect's written approval.

I. Deferred Tests:

1. Deferred Tests List: Identify, in the request for Certificate of Construction Phase Commissioning Completion, proposed deferred tests or other tests approved for deferral until specified seasonal or other conditions are available. When approved, deferred tests may be completed after the date of Construction Phase Commissioning Completion. Identify proposed deferred tests in the request for Certificate of Construction Phase Commissioning Completion as follows:
  - a. Identify deferred tests by number and title.
  - b. Provide a target schedule for completion of deferred tests.
2. Schedule and coordinate deferred tests. Schedule deferred tests when specified conditions are available. Notify Architect and Commissioning Authority at least seven calendar days (minimum) in advance of tests.
3. Where deferred tests are specified, coordinate participation of necessary personnel and of Architect, Commissioning Authority, and Owner's witness. Schedule deferred tests to minimize occupant and facility impact. Obtain Architect's approval of the proposed schedule.

J. Delayed Tests:

1. Delayed Tests List: Identify, in the request for Certificate of Construction Phase Commissioning Completion, proposed delayed tests. Obtain Owner approval of proposed delayed tests, including proposed schedule of completion of each delayed test, before submitting request for Certificate of Construction Phase Commissioning Completion. Include the following in the request for Certificate of Construction Phase Commissioning Completion:



- a. Identify delayed tests by test number and title.
  - b. Written approval of proposed delayed tests, including approved schedule of completion of delayed tests.
2. Schedule and coordinate delayed tests. Schedule delayed tests when conditions that caused the delay have been rectified. Notify Architect and Commissioning Authority at least seven calendar days (minimum) in advance of tests.
3. Where delayed tests are approved, coordinate participation of necessary personnel and of Architect, Commissioning Authority, and Owner's witness. Schedule delayed tests to minimize occupant and facility impact. Obtain Architect's approval of the proposed schedule.

K. Commissioning Compliance Issues:

1. Test results that are not within the range of acceptable results are commissioning compliance issues.
2. Track and report commissioning compliance issues until resolution and retesting are successfully completed.
3. If a test demonstration fails, determine the cause of failure. Direct timely resolution of issue and then repeat the demonstration. If a test demonstration must be repeated due to failure caused by Contractor work or materials, reimburse Owner for billed costs for the participation in the repeated demonstration.
4. Test Results: If a test demonstration fails to meet the acceptance criteria, perform the following:
  - a. Complete a commissioning compliance issue report form promptly on discovery of test results that do not comply with acceptance criteria.
  - b. Submit commissioning compliance issue report form within 24 hours of the test.
  - c. Determine the cause of the failure.
  - d. Establish responsibility for corrective action if the failure is due to conditions found to be Contractor's responsibility.
5. Commissioning Compliance Issue Report: Provide a commissioning compliance issue report for each issue. Do not report multiple issues on the same commissioning compliance issue report.
  - a. Exception: If an entire class of devices is determined to exhibit the identical issue, they may be reported on a single commissioning compliance issue report. (For example, if all return-air damper actuators that are specified to fail to the open position are found to fail to the closed position, they may be reported on a single commissioning issue report. If a single commissioning issue report is used for multiple commissioning compliance issues, each device shall be identified in the report, and the total number of devices at issue shall be identified.
  - b. Complete and submit Part 1 of the commissioning compliance issue report immediately when the condition is observed.



- c. Record the commissioning compliance issue report number and describe the deficient condition on the data form.
  - d. Resolve commissioning compliance issues promptly. Complete and submit Part 2 of the commissioning compliance issue report when issues are resolved.
- 6. Diagnose and correct failed test demonstrations as follows:
  - a. Perform diagnostic tests and activities required to determine the fundamental cause of issues observed.
  - b. Record each step of the diagnostic procedure prior to performing the procedure. Update written procedure as changes become necessary.
  - c. Record the results of each step of the diagnostic procedure.
  - d. Record the conclusion of the diagnostic procedure on the fundamental cause of the issue.
  - e. Determine and record corrective measures.
  - f. Include diagnosis of fundamental cause of issues in commissioning compliance issue report.
- 7. Retest:
  - a. Schedule and repeat the complete test procedure for each test demonstration for which acceptable results are not achieved. Obtain signature of Owner's witness on retest data forms. Repeat test demonstration until acceptable results are achieved. Except for issues that are determined to result from design errors or omissions, or other conditions beyond Contractor's responsibility, compensate Owner for direct costs incurred as the result of repeated test demonstrations to achieve acceptable results.
  - b. For each repeated test demonstration, submit a new test data form, marked "Retest."
- 8. Do not correct commissioning compliance issues during test demonstrations.
  - a. Exceptions will be allowed if the cause of the issue is obvious and resolution can be completed in less than five minutes. If corrections are made under this exception, note the deficient conditions on the test data form and issue a commissioning compliance issue report. A new test data form, marked "Retest," shall be initiated after the resolution has been completed.

### 3.6 COMMISSIONING MEETINGS

- A. Commissioning Authority will schedule and conduct commissioning meetings. Comply with requirements in Section 01 31 00 "Project Management and Coordination."



### 3.7 SEQUENCING

- A. Sequencing of Commissioning Verification Activities: For a particular material, item of equipment, assembly, or system, perform the following in the order listed unless otherwise indicated:
  - 1. Construction Checklists:
    - a. Material checks.
    - b. Installation checks.
    - c. Start up, as appropriate. Some startup may depend on component performance. Such startup may follow component performance tests on which the startup depends.
    - d. Performance Tests:
      - 1) Static tests, as appropriate.
      - 2) Component performance tests. Some component performance tests may depend on completion of startup. Such component performance tests may follow startup.
      - 3) Equipment and assembly performance tests.
      - 4) System performance tests.
      - 5) Intersystem performance tests.
  - 2. Commissioning tests.
- B. Before performing commissioning tests, verify that materials, equipment, assemblies, and systems are delivered, installed, started, and adjusted to perform according to construction checklists.
- C. Verify readiness of materials, equipment, assemblies, and systems by performing tests prior to performing test demonstrations. Notify Architect if acceptable results cannot be achieved due to conditions beyond Contractor's control or responsibility.
- D. Commence tests as soon as installation checks for materials, equipment, assemblies, or systems are satisfactorily completed. Tests of a particular system may proceed prior to completion of other systems, provided the incomplete work does not interfere with successful execution of test.

### 3.8 SCHEDULING

- A. Commence commissioning as early in the construction period as possible.



B. Commissioning Schedule: Integrate commissioning into Contractor's construction schedule. See Section 01 32 00 "Construction Progress Documentation."

1. Include detailed commissioning activities in monthly updated Contractor's construction schedule and short interval schedule submittals.
2. Schedule the start date and duration for the following commissioning activities:
  - a. Submittals.
  - b. Preliminary operation and maintenance manual submittals.
  - c. Installation checks.
  - d. Startup, where required.
  - e. Performance tests.
  - f. Performance test demonstrations.
  - g. Commissioning tests.
  - h. Commissioning test demonstrations.
3. Schedule shall include a line item for each installation check, startup, and test activity specific to the equipment or systems involved.
4. Determine milestones and prerequisites for commissioning. Show commissioning milestones, prerequisites, and dependencies in monthly updated critical-path-method construction schedule and short interval schedule submittals.

C. Two-Week Look-Ahead Commissioning Schedule:

1. Two weeks prior to the beginning of tests, submit a detailed two-week look-ahead schedule. Thereafter, submit updated two-week look-ahead schedules weekly for the duration of commissioning.
2. Two-week look-ahead schedules shall identify the date, time, beginning location, Contractor personnel required, and anticipated duration for each startup or test activity.
3. Use two-week look-ahead schedules to notify and coordinate participation of Owner's witnesses.

D. Owner's Witness Coordination:

1. Coordinate Owner's witness participation via Architect.
2. Notify Architect of commissioning schedule changes at least two work days in advance for activities requiring the participation of Owner's witness.

### 3.9 COMMISSIONING REPORTS

A. Test Reports:

1. Pre-startup reports include observations of the conditions of installation, organized into the following sections:



- a. Equipment Model Verification: Compare contract requirements, approved submittals, and provided equipment. Note inconsistencies.
  - b. Preinstallation Physical Condition Checks: Observe physical condition of equipment prior to installation. Note conditions including, but not limited to, physical damage, corrosion, water damage, or other contamination or dirt.
  - c. Preinstallation Component Verification Checks: Verify components supplied with the equipment, preinstalled or field installed, are correctly installed and functional. Verify external components required for proper operation of equipment correctly installed and functional. Note missing, improperly configured, improperly installed, or nonfunctional components.
  - d. Summary of Installation Compliance Issues and Corrective Actions: Identify installation compliance issues and the corrective actions for each. Verify that issues noted have been corrected.
  - e. Evaluation of System Readiness for Startup: For each item of equipment for each system for which startup is anticipated, document in summary form acceptable to Owner completion of equipment model verification, preinstallation physical condition checks, preinstallation component verification checks, and completion of corrective actions for installation compliance issues.
2. Test data reports include the following:
- a. "As-tested" system configuration. Complete record of conditions under which the test was performed, including, but not limited to, the status of equipment, systems, and assemblies; temporary adjustments and settings; and ambient conditions.
  - b. Data and observations, including, but not limited to, data trend logs, recorded during the tests.
  - c. Signatures of individuals performing and witnessing tests.
  - d. Data trend logs accumulated overnight from the previous day of testing.
3. Commissioning Compliance Issues Reports: Report as commissioning compliance issues results of tests and test demonstrations that do not comply with acceptance criteria. Report only one issue per commissioning compliance issue report. Use sequentially numbered facsimiles of commissioning compliance issue report form included in this Section, or other form approved by Owner. Distribute commissioning compliance issue reports to parties responsible for taking corrective action. Identify the following:
- a. Commissioning compliance issue report number. Assign unique, sequential numbers to individual commissioning compliance issue reports when they are created, to be used for tracking.
  - b. Action distribution list.
  - c. Report date.



- d. Test number and description.
  - e. Equipment identification and location.
  - f. Briefly describe observations about the performance associated with failure to achieve acceptable results. Identify the cause of failure if apparent.
  - g. Diagnostic procedure or plan to determine the cause (include in initial submittal).
  - h. Diagnosis of fundamental cause of issues as specified below (include in resubmittal).
  - i. Fundamental cause of unacceptable performance as determined by diagnostic tests and activities.
  - j. When issues have been resolved, update and resubmit the commissioning issue report forms by completing Part 2. Identify resolution taken and the dates and initials of the persons making the entries.
  - k. Schedule for retesting.
4. Weekly progress reports include information for tests conducted since the preceding report and the following:
- a. Completed data forms.
  - b. Equipment or system tested, including test number, system or equipment tag number and location, and notation about the apparent acceptability of results.
  - c. Activities scheduled but not conducted per schedule.
  - d. Commissioning compliance issue report log.
  - e. Schedule changes for remaining Commissioning-Process Work, if any.
5. Data trend logs shall be initiated and running prior to the time scheduled for the test demonstration.
- a. Trend log data format shall be multiple data series graphs. Where multiple data series are trend logged concurrently, present the data on a common horizontal time axis. Individual data series may be presented on a segmented vertical axis to avoid interference of one data series with another, and to accommodate different axis scale values. Graphs shall be sufficiently clear to interpret data within the accuracy required by the acceptance criteria.
  - b. Attach to the data form printed trend log data collected during the test or test demonstration.
  - c. Record, print out, and attach to the data form operator activity during the time the trend log is running. During the time the trend log is running, operator intervention not directed by the test procedure invalidates the test results.



6. System Alarm Logs: Record and print out a log of alarms that occurred since the last log was printed. Evaluate alarms to determine if the previous day's work resulted in any conditions that are not considered "normal operation."
  - a. Conditions that are not considered "normal operation" shall be reported on a commissioning issue report attached to the alarm log. Resolve as necessary. The intent of this requirement is to discover control system points or sequences left in manual or disabled conditions, equipment left disconnected, set points left with abnormal values, or similar conditions that may have resulted from failure to fully restore systems to normal, automatic control after test completion.

### 3.10 CERTIFICATE OF CONSTRUCTION PHASE COMMISSIONING COMPLETION

- A. When Contractor considers that construction phase commissioning, or a portion thereof which Owner agrees to accept separately, is complete, Contractor shall prepare and submit to Owner and Commissioning Authority through Architect a comprehensive list of items to be completed or corrected. Failure to include an item on such list does not alter Contractor's responsibility to complete commissioning.
- B. On receipt of Contractor's list, Commissioning Authority will make an inspection to determine whether the construction phase commissioning or designated portion thereof is complete. If Commissioning Authority's inspection discloses items, whether or not included on Contractor's list, which are not sufficiently complete as defined in "Construction Phase Commissioning Completion" Paragraph in the "Definitions" Article, Contractor shall, before issuance of the Certificate of Construction Phase Completion, complete or correct such items on notification by Commissioning Authority. In such case, Contractor shall then submit a request for another inspection by Commissioning Authority to determine construction phase commissioning completion.
- C. Contractor shall promptly correct deficient conditions and issues discovered during commissioning. Costs of correcting such deficient conditions and issues, including additional testing and inspections, the cost of uncovering and replacement, and compensation for Architect's and Commissioning Authority's services and expenses made necessary thereby, shall be at Contractor's expense.
- D. When construction phase commissioning or designated portion is complete, Commissioning Authority will prepare a Certificate of Construction Phase Commissioning that shall establish the date of completion of construction phase commissioning. Certificate of Construction Phase Commissioning Completion shall be submitted prior to requesting inspection for determining date of Substantial Completion.

END OF SECTION 01 08 00



**SECTION 01 10 00 – PROJECT SUMMARY OF WORK - PROJECT SCHEDULE****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Construction schedule.
  4. General requirements of Contract.
  5. Owner-furnished products.
  6. Access to site.
  7. Coordination with occupants.
  8. Work restrictions.

**1.3 DEFINITIONS**

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; all openings are closed with permanent construction; and all exterior joints are sealed.

**1.4 PROJECT INFORMATION**

- A. Project Identification: Reconstruction of Plattekill Elementary School.
1. Project Location: 1270 Route 32, Plattekill, New York 12568.
- B. Owner: Wallkill Central School District.
1. Address: 1500 Route 208, PO Box 208, Wallkill, New York 12589.
- C. Architect: Tetra Tech Engineers, Architects & Landscape Architects, P.C., d/b/a Tetra Tech Architects & Engineers.
1. Address: Cornell Business & Technology Park, 10 Brown Road, Ithaca, New York 14850.
- D. Commissioning Authority (CxA): Guth DeConzo
1. Address: 433 River Street, Suite 6004, Troy, New York 12180.



2. Commissioning Authority has been engaged for this Project to provide commissioning services, according to provisions of Division 01 Section "General Commissioning Requirements."
- E. Construction Manager: Barone Construction Group, Inc.
  1. Address: 23 New Paltz Road, Highland, New York 12528.
- F. Building Code in Effect for Project: New York State Uniform Fire Prevention and Building Code and the Energy Conservation Construction Code of New York State.
  1. Comply with the following: Building standards of the New York State Education Department.

#### 1.5 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
  1. Contract PC-1 Plumbing Work Contractor.
- B. Work of this Contract includes, but is not limited to, the following descriptions:
  1. Includes All work traditionally recognized as Plumbing work. This includes but is not limited to, all work shown on the Drawings, unless noted otherwise. It also includes administrative and coordination responsibilities.
    - a. All Drawings.
  2. Demolition:
    - a. Removal of items as shown and/or required.
    - b. Removal and disconnections of existing booster pumps, control panel and concrete housing keeping pad
    - c. Coordinate with the Construction Manager for necessary shutdowns and removals. Minimum of 48-hour notice will be required for any shutdown so that it doesn't affect other trades or the school district's operations. Shutdown may be required to be performed during second shift or weekend.
    - d. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, saw cuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.
  3. Temporary Facilities
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls."
    - b. Provide and maintain temporary electric power and lighting.



- c. Provide and maintain electric and internet service to Construction Manager's field office.
- d. Provide and maintain fire alarm and security system during replacement of the entrance doors and frames.

4. New Construction:

- a. Provide new booster pumps, control panel and piping
- b. Provide concrete housekeeping pad
- c. Provide owner training

- 5. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
- 6. Provide multiple shift work as needed to complete work as shown on milestone schedule. It is the contractor's responsibility to include such shift work in their contract. The owner will not be responsible for paying any cost associated with shift work. Contractors will be required to provide a detailed schedule which will be approved by the CM for all shift work required prior to work commencing.

- C. The Work of the Plumbing Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

- 1. All Specifications

- D. Type of Contract: Project will be constructed under a single prime contract.

## 1.6 CONSTRUCTION SCHEDULE

- A. Contract Award Date: Tentatively Schedule for award November 2024 (Regular Wallkill Board of Education Meeting).

- B. The Work shall be conducted in accordance with the following schedule:

- 1. Commencement of construction (Off-Site Activities): Immediately following Contract Award.
  - a. Commencement of On-Site Activities:
    - 1) Field work interior to buildings, prior to June 30, 2025, for submittals and other preparation activities: Immediately upon required insurances being in place. Field Work to be coordinated with owner's representative and may not interfere with academic or other related educational activities.
    - 2) Plattekill Elementary School
      - a) Interior Improvements Construction Start Date: June 30, 2025.



2. Construction Activities: Daily Work Limits

- a. Monday – Friday: On-Site (Interior / Exterior) construction activities between the hours of 7:00 AM and 10:00 PM with motorized equipment, delivery of construction material or any construction practice. Written Permission from Owner required for additional work hours. Provide Owner with 72 Hour Notice before proposed work.
- b. Saturday – Sunday: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.
- c. Federal Holidays: Written Permission from Owner required for Saturday and Sunday work. Provide Owner with 72 Hour Notice before proposed work.

C. Submittals: Provide all submittals within 30 days after award of contract.

D. Substantial Completion date: August 15, 2025.

E. Functional Completion date: Fifteen (15) days after Substantial Completion, unless otherwise agreed to at Commissioning Meetings.

F. Final completion date: Sixty (60) days after Substantial Completion.

1.7 GENERAL REQUIREMENTS OF CONTRACT

- A. Water Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- B. Electric Power Service from Permanent Existing System: Electric power from permanent existing system is available for use.

1.8 ACCESS TO SITE

- A. General: 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. Use of Site: 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.
  - 1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - 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. 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.

## 1.9 COORDINATION WITH OCCUPANTS

- A. Owner Occupancy: Owner will occupy site and existing and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day 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 Project Representative and approval of authorities having jurisdiction.
  - 2. Maintain in operation all life safety provisions and devices (including, but not limited to, fire alarms, fire extinguishers, smoke detectors, heat sensors, emergency and exit lighting, defibrillators, and similar items).
  - 3. Notify Project Representative not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Coordination with School Schedule:
  - 1. Normal School Year: Owner intends to maintain a full educational program during the normal school year throughout duration of Project, and will make full use of the building and site, unless noted otherwise.
    - a. School and special activities may be conducted within building and on site outside regular school hours, including holidays and weekends.
    - b. Owner's personnel will perform normal custodial and maintenance services for the building areas and systems not involved in construction activities, unless noted otherwise.
  - 2. Summer: Owner may schedule a summer school program or organized recreation activities at the building or site.
    - a. Owner will staff building, at a minimum, with administrative, custodial and maintenance personnel during summer period.
- C. Identification: The Contractor shall require its personnel and those of its subcontractors, sub-subcontractors and suppliers to wear yellow safety vests and visible photo-identification badges acceptable to the Owner, at all times for identification and security purposes.



## 1.10 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. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Project Representative not less than 72 hours in advance of proposed utility interruptions.
  - 2. Obtain Project Representative's written permission before proceeding with utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
  - 1. Notify Project Representative not less than 72 hours in advance of proposed disruptive operations.
  - 2. Obtain Project Representative's written permission before proceeding with disruptive operations.
- D. Indoor Air Quality (IAQ): Protect indoor air quality, including control of emissions and moisture control during construction. Develop a construction IAQ management plan to be followed.
  - 1. Control of Emissions: Provide measures and conduct operations to:
    - a. Protect HVAC systems.
    - b. Protect against emissions from such sources as environmental tobacco smoke, combustion contaminants, biological contaminants, volatile organic compounds (VOCs), formaldehyde, soil gases, pesticides, particles and fibers.
    - c. Provide low- and zero-VOC materials.
    - d. Protect against dust infiltration, especially during dust-producing activities.
    - e. Isolate work areas to prevent contamination of clean or occupied spaces.
    - f. Continuously maintain and regularly inspect areas and IAQ measures to prevent contamination of building areas.
    - g. Provide adequate ventilation, including, but not limited to:
      - 1) Adequate ventilation during and after installation of interior wet products and interior final finishes, and
      - 2) Appropriate air filtration, including filter replacement.



- h. Schedule construction operations involving wet products prior to packaged dry products to the greatest extent possible.
    - i. Vacuum carpeted and soft surfaces with a high-efficiency particulate arrestor (HEPA) vacuum.
    - j. Flush out building for a minimum of 72 hours, or longer if required to dissipate emissions, prior to occupancy.
  - 2. Moisture Control: Provide measures and conduct operations to:
    - a. Provide proper housekeeping to keep materials dry.
    - b. Inspect areas and materials for dampness and mold growth.
    - c. Schedule construction operations so that absorptive materials are protected and weather-proof building as quickly as possible.
    - d. Test for moisture content, moisture penetration and microbial growth to maintain within permissible limits.
- E. Comply with requirements in Division 01 Section “Governmental Safety Requirements”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00



## **SECTION 01 21 00 - ALLOWANCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Contingency allowances.

#### **1.3 ACTION SUBMITTALS**

- A. Submit proposals for purchase of products or systems included in allowances.

#### **1.4 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.

#### **1.5 COORDINATION**

- A. Coordinate allowance items with other portions of the Work.

#### **1.6 CONTINGENCY ALLOWANCES**

- A. Use the contingency allowance only as directed by Architect for Owner's purposes.
- B. Allowance shall include cost to Contractor of specific products and materials under allowance and shall include taxes, freight, and delivery to Project site. Contractor's costs for receiving and handling at Project site, labor, installation, and similar costs related to products and materials under allowance shall be included as part of the allowance.
- C. Overhead and profit related to the allowance shall be included as part of the Contract Sum and not part of the allowance.



## 1.7 ALLOWANCE PROCEDURES

- A. Authorization for use of allowances is documented through Allowance Access Authorization form provided in the Project Manual, accompanied by substantiating data.
- B. At Project closeout, unused amounts remaining in the allowances will be credited to Owner by Change Order.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 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.

### 3.2 SCHEDULE OF ALLOWANCES - PLUMBING WORK CONTRACT (PC-1)

- A. Allowance No. 1: Contingency Allowance: Include the sum of **\$15,000** for use according to Owner's instructions and for hidden and unforeseen conditions discovered during construction.

### 3.3 SCHEDULE OF ALLOWANCES – ALL CONTRACTS

Allowance	Contract	Type	Amount
1	PC-1	Contingency	\$15,000

Attachment: Allowance Access Authorization

END OF SECTION 01 21 00



**Project: Reconstruction to Plattekill Elementary School**

**Project No. 17597-22002****Initiation Date:**

Total original Contract Allowance was:	\$
Amount of Contract Allowance Access previously authorized:	\$
Adjusted Contract Allowance prior to this authorization is:	\$
The amount of available Allowance will Decrease by this Access Authorization:	\$
The remaining Contract Allowance, after this Access Authorization will be:	\$

**Recommended by:**  
**Construction Manager**

By (Signature): \_\_\_\_\_

Date: \_\_\_\_\_

**Approved by:**  
**Owner**

By (Signature): \_\_\_\_\_

Date: \_\_\_\_\_



## **SECTION 01 23 00 - ALTERNATES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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 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 alternate 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. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates 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. Alternate No. 1: Replace Water Closet and Urinal Flush Valves

1. This Alternate affects one Contract, as follows:

- a. Plumbing Contract: At the Plattekill Elementary School, remove and replace all existing water closet and urinal flush valves as with the specific materials.

END OF SECTION 01 23 00



## **SECTION 01 25 00 - SUBSTITUTION PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for substitutions.

#### **1.3 DEFINITIONS**

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor,
  - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product.
  - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Owner.

#### **1.4 ACTION SUBMITTALS**

- A. Substitution Requests: 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 the “Request for Substitution” form attached to this Specification Section. Complete all sections of the form.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Information to support identification of the proposed substitution as “for Cause” or “for Convenience”.
    - b. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
    - c. Coordination information, including a list of changes or revisions needed to other parts of the Work, that will be necessary to accommodate proposed substitution.



- d. 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.
  - e. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - f. Samples, where applicable or requested.
  - g. Certificates and qualification data, where applicable or requested.
  - h. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
  - i. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - j. Evidence of compliance with building code in effect for Project.
  - k. 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.
  - l. Cost information, including a proposal of change, if any, in the Contract Sum.
  - m. 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.
  - n. 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 will request additional information or documentation for evaluation. Such additional information or documentation may include detailed side-by-side comparison charts of the specified product and the proposed substitution, and other data. Only one substitution request for each product will be considered. Architect will make final determination as to whether the substitution is "for Cause" or "for Convenience".
- a. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution.
  - b. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.



## 1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.

## 1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

## PART 2 - PRODUCTS

### 2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change.
  - 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 is compatible with other portions of the Work.
    - e. Requested substitution has been coordinated with other portions of the Work.
    - f. Requested substitution provides specified warranty.
    - g. 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 15 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 is compatible with other portions of the Work.
- g. Requested substitution has been coordinated with other portions of the Work.
- h. Requested substitution provides specified warranty.
- i. 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 3 - EXECUTION (Not Used)

Attachment: Request for Substitution Form

END OF SECTION 01 25 00





## Request for Substitution

This form must be completely filled in with all relevant data by the Prime Contractor and submitted to the Architect in accordance with Project Manual Requirements for consideration before any request to change the drawing or specification requirements will be considered.

### REFERENCE DATA

Project name: \_\_\_\_\_ Date of Request: \_\_\_\_\_  
Location: \_\_\_\_\_ Architect's Project No.: \_\_\_\_\_  
Request by Contractor: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact person: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

### SUBSTITUTION REQUEST DATA

(Provide statement indicating why specified product, fabrication or installation cannot be provided.)

SUBSTITUTION REQUESTED IS FOR: \_\_\_\_\_ Reason for request: \_\_\_\_\_

☐ Named product. \_\_\_\_\_

☐ Product type, material, finish or formulation. \_\_\_\_\_

☐ Fabrication or installation methods. \_\_\_\_\_

Note whether substitution is for cause or convenience: \_\_\_\_\_

PRODUCT / MATERIAL / METHOD FOR WHICH SUBSTITUTION IS REQUESTED IS SHOWN ON THE FOLLOWING DOCUMENTS:

Specification: Section No.: \_\_\_\_\_ Page(s): \_\_\_\_\_ Paragraph/Item No.: \_\_\_\_\_

Drawings: (List No.'s of all Drawings affected): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### DETAILED COMPARISON

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.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### COST/BENEFIT ANALYSIS

Describe in detail any alteration to any other part of the Works required by use of the requested substitution, including work by other Prime Contractors:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If applicable total net cost of any such other project required alterations, including overhead and profit: \$ \_\_\_\_\_  
(Indicate if cost is an "Add" or "Deduct" to contract sum.

Benefits to Owner other than financial: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Schedule impact (Note any impact on project schedule by proposed substitution): \_\_\_\_\_

\_\_\_\_\_



#### **ADDITIONAL INFORMATION REQUIRED**

PRIME CONTRACTOR TO PROVIDE ADDITIONAL INFORMATION AS NECESSARY AND ATTACH THE FOLLOWING INFORMATION:

1. Manufacturer's technical data sheets on proposed products, including test results as applicable.
2. Manufacturer's standard form of warranty.
3. Letter on manufacturer's letterhead stating that manufacturer will warrant products as specified, if specification requires specific warranties not included in manufacturer's standard form of warranty.
4. Letter(s) from other Prime Contractor(s) responsible for works affected by proposed substitution which state the total cost(s) of all such work, if any alteration of other work is required. Prime Contractor submitting this Request for Substitution will be responsible to fully reimburse the Owner for all such additional costs; processed via a deduct Change Order.

#### **CONTRACTOR'S CERTIFICATION**

1. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW, CONTRACTOR CERTIFIES THIS SUBSTITUTION REQUEST HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROJECT MANUAL REQUIREMENTS.
2. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW CONTRACTOR CERTIFIES THE PROPOSED SUBSTITUTION COMPLIES WITH ALL APPLICABLE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND REFERENCED CODES AND STANDARDS.
3. BY SUBMISSION OF THIS SUBSTITUTION REQUEST AND PER SIGNATURE BELOW CONTRACTOR HEREBY WAIVES ALL RIGHTS TO ADDITIONAL COMPENSATION OR TIME THAT MAY SUBSEQUENTLY BECOME NECESSARY BECAUSE OF FAILURE OF PROPOSED MATERIAL TO PRODUCE THE INDICATED AND REQUIRED RESULTS.

Name of Authorized Contractor Representative: \_\_\_\_\_

Signature of Authorized Contractor Representative: \_\_\_\_\_

Name of Contractor \_\_\_\_\_

Date \_\_\_\_\_



## **SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.

#### **1.3 MINOR CHANGES IN THE WORK**

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, via the electronic form procedures outlined in Division 01 Section "Project Management and Coordination" and during the preconstruction conference.

#### **1.4 PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: Architect will issue a description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time, via the electronic form procedures outlined in Division 01 Section "Project Management and Coordination" and during preconstruction conference. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
  - 2. Unless otherwise noted, within 14 days after receipt of Proposal Request, submit a quotation listing 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: Use forms acceptable to Architect.
- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may submit a request for a change to the Architect through Construction Manager.
  - 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 Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
  - 7. Proposal Request Form: Use form acceptable to Architect.

## 1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

## 1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request response, Architect will issue a Change Order for signatures of Owner, Architect, Construction Manager and Contractor.



## 1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. Construction Change Directive contains a 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 01 26 00



## **SECTION 01 29 00 - PAYMENT PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.

#### **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.
- B. AIA Document: Current, authorized editions of standard forms issued by the American Institute of Architects (AIA).
  - 1. Where AIA Documents are identified in this Section, the use of facsimiles of AIA documents or non-AIA documents is prohibited.

#### **1.4 SCHEDULE OF VALUES**

- A. Submit the schedule of values to Architect through Construction Manager at earliest possible date, but no later than fourteen days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content:
  - 1. Use AIA Document G703 as form for schedule of values, with entries typewritten. Unless noted otherwise, provide the following:
    - a. Subschedules for Separate Elements of Work: Provide subschedules for each building.
      - 1) List allowances on subschedules only where exclusively part of separate element of work.
    - b. Summary Schedule: Provide summary schedule listing each subschedule and its total and each allowance; total of all subschedules and allowances shall equal the Contract Sum.



2. Identification: Include the following Project identification on the schedule of values:
  - a. Project name and location.
  - b. Architect's project number.
  - c. Contractor's name and address.
  - d. Date of submittal.
3. Use the Project Manual table of contents as a guide to establish line items for the schedule of values. Provide line item(s) for each Specification Section.
4. Arrange the schedule of values to indicate the following for each item listed, completing columns A, B and C of AIA Document G703:
  - a. Column A: Indicate Specification Section number.
  - b. Column B: Indicate Specification Section title, and provide separate line items for labor and materials.
  - c. Column C: Provide separate line item dollar values for labor and materials. Round amounts to nearest whole dollar.
5. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment. In addition to line items for each applicable specification section, include the following:
  - a. Multiple line items for amounts in excess of five percent of Contract Sum, broken out to subcomponents equaling not greater than five percent each.
  - b. Project Startup:
    - 1) Include separate line items for project startup requirements, including the following separate line items:
      - a) Insurance, based on actual invoice amount.
      - b) Performance and payment bonds, based on actual invoice amount.
      - c) Mobilization.
      - d) Temporary facilities and controls.
  - c. Allowances: Provide a separate line item in the schedule of values for each allowance.
  - d. Submittals: Include a minimum of Two percent of Contract Sum.
  - e. Supervision: Include a minimum of Two percent of Contract Sum.
  - f. Safety and Field Reports: Include a minimum of Two percent of Contract Sum.
  - g. Coordination Drawings: Provide a separate line item in the schedule of values for Coordination Drawings. Include a minimum of the following percentages of Contract Sum.
    - 1) Mechanical Contract: Two percent of the Contract Sum.
    - 2) All Other Contracts: One percent of the Contract Sum.



- h. Meetings: Provide a separate line item in the schedule of values for Contractor attendance at meetings. Include a minimum of Two percentage of Contract Sum.
  - i. Wood Blocking: Provide a separate line item in the schedule of values for wood blocking.
  - j. Testing and Balancing (TAB): Include a minimum of Two percent of the Contract Sum (Mechanical Contract: Two percent as separate line items for testing and balancing requirements, as follows:
    - 1) Pre-TAB activities (20 percent of TAB).
    - 2) TAB activities (40 percent of TAB).
    - 3) Final TAB reports. (40 percent of TAB).
  - k. Punch List: Three percent of Contract Sum.
  - l. Project Closeout:
    - 1) Include separate line items for project closeout requirements, as follows:
      - a) Demobilization.
      - b) Warranties.
      - c) Final cleaning.
      - d) Operation and maintenance manuals.
      - e) Project record documents.
      - f) Demonstration and training.
    - 2) The total value of all project closeout line items shall equal to not less than the following:
      - a) Five percent of the Contract Sum.
6. Each item in the schedule of values shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

## 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications as certified by Architect and Construction Manager.
- 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 **seven** days prior to due date for review by Architect and Construction Manager.
- C. Application for Payment Forms: Use AIA Document G732 and AIA Document G703 as form for Applications for Payment.



- D. **Application Preparation:** Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Construction Manager will return incomplete applications without action.
1. Entries shall match data on the schedule of values.
  2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received.
  3. Include amounts of fully-executed Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- 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. Enter in column F (Materials Presently Stored) of AIA Document G703 the value of materials presently stored for which payment is sought. Recalculate the total of the column at the end of each pay period. This value covers both materials newly stored for which payment is sought and materials previously stored which are not yet incorporated into the Project. Payment by the Owner for stored materials does not result in a deduction from this column. Only as materials are incorporated into the Project is their value deducted from this column and incorporated into column E (Work Completed--This Period.).
  2. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
  3. 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.
- F. **Transmittal:** Submit three signed and notarized original copies of each Application for Payment to Construction Manager.
- G. **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.
  4. Certificates of insurance and insurance policies.
  5. Performance and payment bonds.
- H. **Final Payment Application:** Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to, two originals and two copies each of the following:
1. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  2. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  3. AIA Document G707, "Consent of Surety to Final Payment."



PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

Attachment: Stored Material Invoicing Documentation

END OF SECTION 01 29 00





**TETRA TECH**  
ARCHITECTS & ENGINEERS

**Stored Materials Invoicing**  
**Documentation**

**Project:** \_\_\_\_\_

**Project No.:** \_\_\_\_\_ **Contract Type:** \_\_\_\_\_

**Contractor:** \_\_\_\_\_ **Subcontractor:** \_\_\_\_\_

**Reason for Request:**

\_\_\_\_\_  
\_\_\_\_\_

**Application for Payment No.:** \_\_\_\_\_ **Date:** \_\_\_\_\_

1. **Material Identification**

Description:

Quantity:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Provide Specific Location of Materials Stored:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. **Material Value** \$ \_\_\_\_\_

☐ Attach an Invoice or Quantified Statement of Value.

3. **Certificate of Insurance**

☐ Attach a Certificate of Insurance for the above specified materials. Certificate shall name \_\_\_\_\_  
(Name of District)  
as a loss payee with respect to the specified materials.

4. **Transfer of Title**

The Contractor hereby agrees to transfer complete ownership of all listed materials to \_\_\_\_\_  
(Name of District)  
at the time payment is made to Contractor for the above referenced Application for Payment. The Contractor remains responsible for all contractual requirements for the above listed materials including complete installation and providing all warranties.

Signed

Date

\_\_\_\_\_  
\_\_\_\_\_



## **SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Digital data files.
  - 3. Coordination drawings.
  - 4. Owner's Project Representative activities.
  - 5. Electronic form procedures.
  - 6. Requests for Information (RFIs).
  - 7. Project meetings.

#### **1.3 COORDINATION PROCEDURES**

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which 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.
  - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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. Installation and removal of temporary facilities and controls.
  - 3. Project meetings.
  - 4. Project closeout activities.
- C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.



#### 1.4 DIGITAL DATA FILES

- A. Architect's Digital Data Files: Upon request, and at Architect's sole discretion, electronic copies of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals.
1. Architect may furnish Contractor digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
    - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Format: The Contract Drawings may be available in AutoCAD and .pdf formats.
      - 1) Architect's charge for drawings in AutoCAD format: \$50 per drawing.
      - 2) Architect's charge for drawings in .pdf format: \$50 per request.
    - c. Contractor shall fill out and submit a Request for Electronic Drawing Files form included in Project Manual for any drawing files.
    - d. Contractor shall also execute a Terms of Electronic File Transfer (TOFT) included in Project Manual for any drawing files furnished in AutoCAD format.
    - e. The following drawings may be furnished for the appropriate discipline:
      - 1) Site base file drawings.
      - 2) Floor plans.
      - 3) Reflected ceiling plans.

#### 1.5 OWNER'S PROJECT REPRESENTATIVE ACTIVITIES

- A. Project Representative shall:
1. Serve as liaison between Architect, Contractor, and Owner.
  2. Perform on-site observations of the progress and quality of the Work as may be reasonably necessary to assist the Architect determine, in general, if the Work is being performed in a manner indicating that the Work when completed will be in conformance with the Contract Documents. Notify the Architect if, in the Project Representative's opinion, Work does not conform to the Contract Documents or requires special inspection or testing.
  3. Monitor the Contractor's construction schedules on an ongoing basis and alert the Architect to conditions that may lead to delays in completion of the Work.
  4. Coordinate shared access to work areas.
  5. Coordinate and issue written approvals for acceptable interruptions of utilities and potentially disruptive activities.



6. Receive and review suggestions proposed by the Contractor, and submit them, together with recommendations, to the Architect.
7. Attend all meetings and report to the Architect on the proceedings.
8. Notify Architect when tests required by the Contract Documents and inspections by authorities having jurisdiction will be performed. Observe tests required by the Contract Documents and inspections by authorities having jurisdiction. Record and report to the Architect on test procedures, inspections, and results. Verify testing is performed in accordance with specified requirements and at appropriate times.
9. Maintain records at the construction site in an orderly manner, including correspondence, Contract Documents, Change Orders, Construction Change Directives, reports of meetings, Shop Drawings, Product Data and similar submittals; supplementary drawings, color schedules and requests for payment; and names, addresses telephone numbers, and email addresses of the Contractors, Subcontractors and principal material suppliers.
10. Maintain a daily log of activities at the site, including weather conditions, nature and location of Work being performed, verbal instructions and interpretations given to the Contractor, and specific observations. Record any occurrence or Work that might result in a claim for a change in Contract Sum or Contract Time. Maintain a list of visitors, their titles, and time and purpose of their visit.
11. Notify the Architect if any portion of the Work requiring Shop Drawings, Product Data or Samples is commenced before such submittals have been approved by the Architect. Receive and log Samples required at the site, notify the Architect when they are ready for examination, record the Architect's action and maintain custody of approved Samples.
12. Review the Contractor's record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications at intervals appropriate to the stage of construction and notify the Architect of any apparent failure by the Contractor to maintain up-to-date records.
13. Review Applications for Payment and forward to the Architect with recommendations for disposition.
14. Assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion.
15. Assist the Architect in receipt and transmittal to the Owner of documentation required of the Contractor at completion of the Work.

B. Project Representative shall not:

1. Authorize deviations from the Contract Documents.
2. Approve submittals or substitute materials or equipment.
3. Personally conduct or participate in tests or third party inspections.



4. Assume any of the responsibilities of the Contractor's superintendent or of Subcontractors.
5. Expedite the Work for the Contractor.
6. Have control over or charge of or be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work.
7. Authorize or suggest that the Owner occupy the Project in whole or in part.

## 1.6 ELECTRONIC PROCEDURES

- A. Use Submittal Exchange for the following processes:
  1. Submittals, refer to Division 01 "Submittal Procedures".
  2. Request for Information (RFI).
  3. Architect's Supplemental Instruction (ASI), refer to Division 01 Section "Contract Modification Procedures".
  4. Proposal Request (PR), refer to Division 01 Section "Contract Modification Procedures".
  5. Change Order (CO), refer to Division 01 Section "Contract Modification Procedures".
  6. Contractor Quotes, refer to Division 01 Section "Contract Modification Procedures".
  7. Allowance Access Authorization (AAA), refer to Division 01 Section "Contract Modification Procedures".
  8. Payment Applications, refer to Division 01 Section "Payment Procedures".
  9. Inspection Reports.
- B. Contractor and other parties granted access by the Architect to Submittal Exchange shall follow instructions issued by the Architect during the preconstruction conference.

## 1.7 REQUESTS FOR INFORMATION (RFIs)

- 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, via the electronic form procedures outlined.
  1. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of others.
- B. Content of the RFI: Include a detailed description of item needing information or interpretation and the following:
  1. Project number.
  2. RFI number.
  3. Contract number and title.
  4. Name of Contractor.



5. Name of Contractor's contact person.
  6. Email address of Contractor's contact person.
  7. RFI subject.
  8. Question: Fully describe question or information requested. Include:
    - a. Specification Section number and title and related paragraphs, as appropriate.
    - b. Drawing number and detail references, as appropriate.
    - c. Field dimensions and conditions, as appropriate.
    - d. Contractor's suggested resolution. If Contractor's solution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  9. 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. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow reasonable time for Architect's response for each RFI.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Architect's actions on submittals.
    - f. Incomplete RFIs or inaccurately prepared RFIs.
  2. Architect's action may include a request for 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 Division 01 Section "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within seven (7) days of receipt of the RFI response.
- D. On receipt of Architect's action, immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven (7) days if Contractor disagrees with response.
- E. Electronic RFI Log: Architect will maintain a tabular log of RFIs organized by RFI number.



## 1.8 PROJECT MEETINGS

- A. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner, Construction Manager and Architect, but no later than 15 days after date of Notice of Award.
1. Attendees: Authorized representatives of Owner, Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; 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.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Designation of key personnel and their duties.
    - b. Lines of communications.
    - c. Bonds and insurance.
    - d. Subcontract list.
    - e. Schedule of values.
    - f. Payment request estimate.
    - g. Applications for Payment.
    - h. Contractor's construction schedule.
    - i. Submittals.
    - j. Electronic form procedures (RFIs, ASIs, PRs).
    - k. Procedures for processing Change Orders and Construction Change Directives.
    - l. Quality control.
    - m. Adjoining properties.
    - n. Project schedule.
    - o. Contractor review of Contract Documents, including Drawings and Specifications.
    - p. Project meetings.
    - q. Project closeout procedures.
    - r. Electronic drawings.
    - s. AIA and Word documents.
  3. Report: Construction Manager will prepare and distribute meeting report.
- B. Site Preconstruction Conference: Construction Manager will schedule and conduct a site preconstruction conference, at a time convenient to Owner, Construction Manager and Architect.
1. Attendees: Authorized representatives of Owner, Owner's testing agency, Construction Manager, Architect, and their consultants; Geotechnical Engineer of Record; Contractor and its superintendent; 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.
  2. Agenda: Discuss items of significance, including the following:
    - a. Designation of key personnel and their duties.
    - b. Lines of communication.



- c. Electronic form procedures (RFIs, ASIs, PRs).
  - d. Submittal procedures.
  - e. Subcontracts.
  - f. Construction schedule.
  - g. Temporary facilities and controls.
  - h. Use of premises.
  - i. Permits.
  - j. Soil erosion and sediment control.
  - k. Tree protection.
  - l. Procedures for testing and inspecting.
  - m. Roles and responsibilities of each party.
  - n. Topsoil.
  - o. Seeding/sodding.
  - p. Planting.
  - q. Concrete.
  - r. Retaining walls.
  - s. Planting islands.
  - t. Staging removal.
3. Report: Construction Manager will prepare and distribute meeting report.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Review each Specification Section for requirements for preinstallation conferences.
    - a. No later than 15 days after date of Notice of Award, submit to Architect complete listing of preinstallation conferences to be held.
  - 2. 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, Construction Manager, and Commissioning Authority of scheduled meeting dates.
  - 3. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Deliveries.
    - c. Submittals.
    - d. Review of mockups.
    - e. Time schedules.
    - f. Weather limitations.
    - g. Manufacturer's written instructions.
    - h. Warranty requirements.
    - i. Compatibility of materials.
    - j. Acceptability of substrates.
    - k. Temporary facilities and controls.
    - l. Space and access limitations.
    - m. Testing and inspecting requirements.



- n. Installation procedures.
  - o. Coordination with other work.
  - p. Required performance results.
  - q. Protection of adjacent work.
- 4. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 5. Reporting: Distribute report of the meeting to each party present and to other parties requiring information.
  - 6. 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. Progress Meetings: Construction Manager will conduct progress meetings at biweekly intervals, unless otherwise necessitated.
- 1. Attendees: In addition to representatives of Owner , Commissioning Authority, Construction Manager, and Architect, 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.
  - 2. Agenda: Review report of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Review present and future needs of each entity present, including the following:
      - 1) Report of progress since previous meeting.
      - 2) Architect/Engineer discussion items.
      - 3) Status of ASIs, PRs, Change Orders.
      - 4) Status of submittals.
      - 5) 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.
        - a) 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) Review schedule for next period.
      - 6) Date of Substantial Completion.



- 7) Status of RFIs.
  - 8) Owner discussion items.
  - 9) Discussion items for the Contract.
  - 10) General and administrative items, including such items as:
    - a) Project documentation.
    - b) Prohibitions.
    - c) Identification cards.
    - d) Separation.
    - e) Egress.
    - f) Conservation.
3. Report: Construction Manager will prepare and distribute the meeting report to each party present and to parties requiring information.
- E. Health and Safety Committee Meetings: Owner will conduct health and safety committee meetings as needed, in accordance with requirements of Regulations of the Commissioner of Education, Part 155 (8 NYCRR 155), Section 155.5(c)(2).
1. Attendees: In addition to representatives of the Owner and Construction Manager, each contractor 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.
  2. Agenda: Discuss items of significance, including the following:
    - a. Health and safety matters related to the construction project.
  3. Report: Owner will prepare and distribute meeting report to each party present and to parties requiring information.
- F. Project Closeout Conference: Construction Manager will schedule and conduct a project closeout conference, at a time convenient to Owner, Construction Manager and Architect, but no later than 90 days prior to final scheduled date of Substantial Completion.
1. Attendees: Authorized representatives of Owner, Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; 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.
  2. 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. Submittal of written warranties.
    - d. Requirements for preparing operations and maintenance data.



- e. Requirements for delivery of material samples, attic stock, and spare parts.
  - f. Requirements for demonstration and training.
  - g. Owner's occupancy requirements.
  - h. Responsibility for removing temporary facilities and controls.
3. Report: Construction Manager will prepare and distribute meeting report.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

Attachment: Request for Electronic Drawing Files  
Terms of Electronic File Transfer (TOFT)

END OF SECTION 01 31 00





**TETRA TECH**  
ARCHITECTS & ENGINEERS

Cornell Business + Technology Park  
10 Brown Road  
Ithaca, New York 14850  
Tel. (607) 277-7100  
Fax (607) 277-1410

**Request for Electronic Drawing Files** – Business Office

---

Prime Contractor Name:

Prime Contractor Address:

Contact to Receive Invoice:

Project Name:

Project Number:

Project Manager:

Drawing Type: Some drawings may be only available as a PDF file and may NOT be available as an AutoCAD file.

☐ PDF Files (\$50 per request)

☐ AutoCAD type files (\$50 per file)

For PDF files:

List each Drawing # Requested – If requesting entire set note “All”.

For AutoCAD files:

Number of drawing files

List each Drawing # Requested

Contractor Signature \_\_\_\_\_





**TETRA TECH**  
ARCHITECTS & ENGINEERS

Cornell Business + Technology Park  
10 Brown Road  
Ithaca, New York 14850  
Tel. (607) 277-7100  
Fax (607) 277-1410

**Request for Electronic Drawing Files** – Business Office

---

Prime Contractor Name:

Prime Contractor Address:

Contact to Receive Invoice:

Project Name:

Project Number:

Project Manager:

Drawing Type: Some drawings may be only available as a PDF file and may NOT be available as an AutoCAD file.

☐ PDF Files

☐ AutoCAD type files

For PDF files:

List each Drawing # Requested – If requesting entire set note “All”.

For AutoCAD files:

Number of drawing files

List each Drawing # Requested

Contractor Signature \_\_\_\_\_





Cornell Business + Technology Park  
10 Brown Road  
Ithaca, New York 14850  
Tel. (607) 277-7100  
Fax (607) 277-1410

### **Terms of Electronic File Transfer (TOFT)**

.....

The purpose of this document is to establish the terms of use and liability related to the electronic transfer of files from Tetra Tech Engineers, Architects & Landscape Architects, P.C. d/b/a Tetra Tech Architects & Engineers (hereinafter "Tetra Tech") to the Recipient (designated below). This Agreement covers all electronic files transmitted to the Recipient, associated with the Project(s) listed below, that are not otherwise covered by a contractual agreement to provide such files.

**Project(s) & Project #s:** \_\_\_\_\_  
\_\_\_\_\_

**Recipient of Electronic Files:**

Company Name: \_\_\_\_\_  
Company Address: \_\_\_\_\_  
\_\_\_\_\_

**Terms of Electronic File Transfer:**

1. The electronic files (Files) furnished by Tetra Tech to the person or entity receiving the Files (Recipient) are provided only for the convenience of the Recipient, and only for its sole use. RECIPIENT AGREES THAT, BY OPENING THE PACKAGE CONTAINING THE FILES, RECIPIENT SHALL BE BOUND BY AND SUBJECT TO THE TERMS OF THIS DISCLAIMER.
2. Recipient recognizes that the Files may not be adequate or appropriate for Recipient's needs. In the case of any defects in the Files or any discrepancies between the Files and the hardcopy of the Files bearing the seal of Tetra Tech's professional registrant (if applicable), the sealed hardcopy shall govern. Recipient accepts the Files on an "as-is" basis, with any and all faults. There are no express warranties made by Tetra Tech with respect to the Files, and any implied warranties are excluded.
3. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. Tetra Tech assumes no responsibility for the accuracy or completeness of the Files, and any use or reuse of such electronic data for any purpose shall be at the Recipient's sole risk.
4. Furthermore, in consideration of the use of the electronic data and the Files, Recipient agrees, to the fullest extent permitted by law, to defend (by legal counsel selected by Tetra Tech), indemnify, and hold Tetra Tech harmless from any and all claims, damages, losses, costs, and expenses, including attorney's fees and court costs (including the costs of any appeals) arising out of or resulting from Recipient's use, reuse, or use by others, regardless of whether such claims, damages, losses, costs, and expenses are caused in whole or in part by Tetra Tech. The duty to defend, indemnify, and hold Tetra Tech harmless shall apply regardless of whether such claims, damages, losses, costs, and expenses arise out of causes of action for tort, including negligence, contract, warranty, or strict liability.
5. The Recipient agrees to the following use restrictions of the electronic files:
  - a. The use of these files is limited only to the operation and maintenance of the above referenced project(s).
6. By signing below, the Recipient accepts full responsibility for the use of all electronic files received from and/or produced by Tetra Tech for the Project(s) listed above and any documents, instructions, or otherwise produced there from by the Recipient along with all Terms of Electronic Transfer indicated herein. A copy of this Agreement, executed by Tetra Tech, will be provided before or with the first electronic file transmittal.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Type or Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date



## **SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Contractor's construction schedule.
  - 2. Reports.

#### **1.3 INFORMATIONAL SUBMITTALS**

- A. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period. Follow format outlined in attachment at end of this Section.
- B. Site Condition Reports: Submit at time of discovery of differing conditions.
- C. Special Reports: Submit at time of unusual event.

#### **1.4 COORDINATION**

- A. Secure time commitments for performing critical elements of the Work from entities involved.
- B. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

#### **1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL**

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
- B. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

#### **1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)**

- A. Gantt-Chart Schedule: Submit a comprehensive, horizontal, Gantt-chart-type, Contractor's construction schedule per requirements of Division 01 Section "Project Summary – Project Schedule".
  - 1. Format: Refer to accompanying "Format for Construction Schedule".



- B. Preparation: Indicate each significant construction activity separately, by Specification Section, coordinated with the schedule of values. Provide line item(s) for each Specification Section.
- C. Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities.
- D. Distribution: Distribute copies of approved schedule to Architect, Construction Manager, Owner, separate contractors, testing and inspecting agencies, and other parties with a need-to-know schedule responsibility.
  - 1. When revisions are made, distribute updated schedules to the same parties.

#### 1.7 REPORTS

- A. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- B. Special 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, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

Attachment: Format for Construction Schedule

END OF SECTION 01 32 00



## FORMAT FOR CONSTRUCTION SCHEDULE

Technical drawing of a construction progress schedule form. The drawing includes dimensions and annotations for the form's layout.

**Dimensions and Annotations:**

- Top horizontal dimension: 17"
- Top right corner dimension: 10"
- Top right corner dimension: 1/2"
- Top left corner dimension: 1/2" TYP.
- Top left corner dimension: 1"
- Top left corner dimension: 1"
- Top left corner dimension: 4"
- Top left corner dimension: 1" MIN.
- Left vertical dimension: 11"
- Left vertical dimension: 7"
- Left vertical dimension: 1/4" MIN.
- Left vertical dimension: 1/2"
- Left vertical dimension: 1"

**Form Layout:**

- CONSTRUCTION PROGRESS SCHEDULE** (Title)
- PROJECT NAME** (Field)
- CONTRACT FOR:** (Field)
- CONTRACT START:** (Field)
- COMPLETION:** (Field)
- SECTION NUMBER** (Field)
- DESCRIPTION / ITEM** (Field)
- DATE MONTH** (Field)
- LEGEND** (Field)
- prepared by** (Field)
- date** (Field)
- approved by** (Field)
- revision date** (Field)

**LETTERING HEIGHT : 1/8" MINIMUM**

## Format

Provide separate bar for each item in sequential order from beginning of Project to completion with the following information included for each item:

- Related Technical Specification number.  
Distinct graphic delineation, indicating area of building where schedule item is located.  
Shop drawing submittal date and required acceptance date.  
Product procurement date and anticipated delivery date.  
Projected start and completion dates for each item.



## FORMAT FOR CONSTRUCTION SCHEDULE

## Sample

Related Technical Specification number.  
Distinct graphic delineation, indicating area of building where schedule item is located.  
Shop drawing submittal date and required acceptance date.  
Product procurement date and anticipated delivery date.  
Projected start and completion dates for each item.



## **SECTION 01 33 00 - SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes requirements for the administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
  - 1. Process designated submittals for the Project electronically through designated Electronic Submittal System. PDF files must be opened, viewed, modified and printed using Adobe Acrobat PDF software to view reviewer comments/stamps.

#### **1.3 DEFINITIONS**

- A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. As-Specified Products: Products to be incorporated into Project as specified by manufacturer name and product designation and including all options in Part 2 of technical specifications, intended to be installed as specified in Part 3 of technical specifications, and from a product category specifically identified as eligible to be considered as an "as-specified product" in the Action Submittals Article in Part 1 of technical specifications.
- C. Informational Submittals: Written and graphic information and physical samples that do not require Architect's and Construction Manager'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."
- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.
- E. Electronic Submittal System: A method to transmit certain electronic submittals between the Contractor, Construction Manager, Architect, and Owner, using Submittal Exchange website service.
  - 1. For consistency, the standard file format will be PDF. Convert paper originals and other file formats to PDF prior to submission.
  - 2. In the event of system malfunction, process submittals in accordance with the Architect's instructions, until the system malfunction has been corrected.



3. For this Project, process the following submittal types through the designated electronic submittal system:
  - a. Product Data.
  - b. Sustainable Design Submittals.
  - c. Shop Drawings.
  - d. Product Schedules.
  - e. Qualification Data.
  - f. Certificates (Welding, Installer, Manufacturer, Product, and Material, as applicable).
  - g. Test Reports (Material, Product, Preconstruction, Compatibility, and Field, as applicable).
  - h. Research Reports.
  - i. Warranty (sample).
  - j. Design Data, including calculations.
  - k. Coordination Drawings.
4. For Samples, provide electronic submittal of Sample cover sheet, identifying location and actual delivery date of Samples. Deliver Samples to location (Architect's office, Project site, etc.) as directed by the Architect.

#### 1.4 COLOR SCHEDULE

- A. Color Schedule: Within 30 days after date of Notice of Award, submit a complete list of proposed manufacturers and complete product designations (i.e. model, grade, series, product line, etc.) for each item requiring color selection by Architect.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. 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. Where indicated, submit all submittal items required for each Specification Section concurrently.
  3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow sufficient time for submittal review, including time for resubmittals. 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.



- C. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Include a cover sheet on each submittal item for identification. Do not combine different submittals under same cover sheet; only one submittal is to be provided per email.
    - a. Cover Sheet Form: Use PDF version of sample form included in Project Manual. Complete each item on form, sign and date. Architect will furnish PDF version of sample form.
  2. Name submittal file as directed by Architect.
  3. Transmit each submittal via Electronic Submittal System.
  4. Transmit each submittal to Architect using the Submittal Exchange website [www.submittalexchange.com](http://www.submittalexchange.com).
- D. Resubmittals: Make resubmittals in same form and, for non-electronic submittals, in the same number of copies as initial submittal.
1. Note date and content of revision in label or title block and clearly indicate extent of revision.
  2. Resubmit submittals until they are marked with approval notation from Architect and Construction Manager.
  3. Refer to the General Conditions for provisions allowing Owner to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of certain resubmittals.
- 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.
- F. Use for Construction: Retain complete electronic copies of submittals on Project site during Construction. Also maintain one complete set of hard paper copies of all approved submittals on Project site during Construction. Use only final action submittals that are marked with approval notation from Architect and Construction Manager.
- G. Use of As-Specified Verification Form: The As-Specified Verification Form is intended to reduce certain action submittal paperwork for select products to be incorporated into the Work. If product to be incorporated into Project is specified by name and product designation in Part 2 of the Technical Specification Section and is from a product category specifically identified as eligible to be considered as an “as-specified product” in the Action Submittals Article in Part 1 of technical specifications, submit **“As-Specified Verification Form”** attached to this Specification Section.



## 1.6 ENVIRONMENTAL REQUIREMENTS

- A. All products provided for use in construction of this Project are to be free of asbestos. Refer to Division 01 Section "Closeout Procedures" for certification required to be provided. The Owner may provide random testing of installed products/ construction for asbestos content. Any Contractor-installed product found to contain asbestos shall be classified as defective work. Defective work shall be corrected by the Contractor as specified in the General Conditions.

## 1.7 SUBMITTAL PROCEDURES, GENERAL

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

## 1.8 ELECTRONIC SUBMITTAL REQUIREMENTS

- A. Use the designated electronic submittal system for submittals in this Article.
  - 1. Review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
  - 2. Transmit each submittal to Construction Manager and Architect using the Submittal Exchange website, [www.submittalexchange.com](http://www.submittalexchange.com).
  - 3. For Action Submittals, Architect / Engineer and Construction Manager review comments will be made available on the Submittal Exchange website for downloading. Contractor will receive email notice of completed review.
  - 4. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
  - 5. After award of contract, training will be provided by Submittal Exchange regarding use of website and PDF submittals. Contact Submittal Exchange at 1-800-714-0024.
  - 6. Internet Service and Equipment Requirements:
    - a. Email address and Internet access at Contractor's main office.
    - b. Adobe Acrobat ([www.adobe.com](http://www.adobe.com)), for applying electronic stamps and comments.
  - 7. Contractor shall bear the cost of the Submittal Exchange project subscription.
  - 8. Retain one electronic copy of all approved submittals, as part of the project records required at Project Closeout.
  - 9. Tetra Tech Architects and Engineers will be the Submittal Exchange Project Leader and Subscriber.



- B. **Product Data:** Collect information into a single submittal for each element of construction and type of product or equipment.
1. Mark submittal to show which products and options are applicable.
  2. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Statement of compliance with specified referenced standards.
    - c. Testing by recognized testing agency.
  3. For equipment, include the following in addition to the above, as applicable:
    - a. Printed performance curves.
    - b. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- C. **As-Specified Submittals:** Complete the **“As-Specified Verification Form”**.
1. Refer to the Action Submittals Article of technical specification sections. If the product to be incorporated into the Project is an “as-specified product” as defined in this Section, then submit **“As-Specified Verification Form”** in lieu of Product Data, otherwise submit full Product Data.
  2. Do not use **“As-Specified Verification Form”** unless specifically indicated in technical specification.
  3. The **“As-Specified Verification Form”** alone serves as the submittal for the specific product and no additional action submittal data is due at the time of the submittal. The full specific product technical data, however, is required to be included in the Operation and Maintenance Manual. Comply with requirements specified in Division 01 Section “Operation and Maintenance Data”.
- D. **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 dimensions established by field measurement.
    - e. Relationship and attachment to adjoining construction clearly indicated.
    - f. Seal and signature of professional engineer if specified.
- E. **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.
- F. 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.
- G. Certificates:
1. 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 or ASME forms as applicable. Include names of firms and personnel certified.
  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. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
  5. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- H. Test Reports:
1. 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.
  2. 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.
  3. 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.
  4. 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.



5. 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.
- I. 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.
- J. Warranty: Submit sample warranties as required in individual Specification Sections.
- K. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- L. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

#### 1.9 SUBMITTAL REQUIREMENTS FOR COMMISSIONING

- A. Provide the Commissioning Authority with a copy of all submittals for equipment to be commissioned.
  1. The Commissioning Authority will review and approve Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the Architect's review.
- B. Data for Commissioning:
  1. Refer to the technical Division Commissioning Section for listing of systems to be commissioned. Provide specific information needed about each piece of commissioned equipment or system in submittal as required to facilitate commissioning. Typically this will include detailed manufacturer installation and start-up, operating, troubleshooting and maintenance procedures, full details of any Owner-contracted tests, fan and pump curves, full factory testing reports, if any, and full warranty information, including all responsibilities of the Owner to keep the warranty in force clearly identified. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians for pre-functional testing shall be submitted to the Commissioning Authority.
  2. The Commissioning Authority may request further documentation necessary for the commissioning process. This data request may be made prior to submittals, during review, or subsequently as additional requirements become evident.
  3. Much of this information is contained in the regular Operation and Maintenance (O&M) manual submittals normally submitted in the Project. For commissioned projects, this information is typically required prior to the regular formal O&M manual submittals and will be duplicated therein, facilitating the later creation of the O&M manual.



- C. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Commissioning Authority's review .

#### 1.10 NON-ELECTRONIC SUBMITTAL REQUIREMENTS

- A. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - 2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of applicable Specification Section.
  - 3. 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.
  - 4. 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 two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Deliver one set to Architect's office, deliver the other set to the construction trailer at the job site.
  - 5. 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 two sets of Samples. Deliver one set to Architect's office, deliver the other set to the construction trailer at the job site.
      - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- B. 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. Include the following information in tabular form:



1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Submit subcontract list in the following format:
    - a. Number of Copies: Four paper copies of subcontractor list, unless otherwise indicated. Architect will return one copy.
- C. List of Key Personnel Names: No later than 15 days after date of Notice of Award, 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 emergency, office, and cellular telephone numbers and email addresses.
    - a. Number of Copies: Four paper copies of key personnel list, unless otherwise indicated.

#### 1.11 MISCELLANEOUS SUBMITTAL REQUIREMENTS

- A. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- B. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

#### 1.12 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. Identify any deviations from Contract Document requirements. Mark cover sheet with approval before submitting to Architect and Construction Manager.
  1. Sign and date statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  2. If using Adobe Acrobat to electronically sign the Submittal Cover Sheet do not use the Certify Sign, Time Stamp feature as this will lock the document for further editing.

#### 1.13 ARCHITECT'S AND CONSTRUCTION MANAGER'S ACTION

- A. General: Architect and Construction Manager will not review submittals that do not bear Contractor's approval and will return them without action.
- B. Action Submittals: Architect and Construction Manager will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect and Construction Manager will mark submittal appropriately to indicate action, as follows:



1. Final Unrestricted Release: Where the submittal is marked "Approved," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.
  2. Final-but-Restricted Release: Where the submittal is marked "Approved As Noted," the Work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.
  3. Rejected: Where the submittal is marked "Rejected," do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
  4. Incomplete - Resubmit: Where the submittal is marked "Incomplete, Submit Additional Information," do not proceed with the Work covered by the submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance with requirements, and resubmit.
- C. Informational Submittals: Architect and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Limit information submitted to specific products indicated. Do not submit extraneous matter. Submittals containing excessive extraneous matter will be returned for resubmittal without review.
- F. Submittals not required by the Contract Documents may be returned by the Architect without action.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

Attachments: Tt Cover Sheet  
As-Specified Verification Form  
Tt Cover Sheet for Closeout Submittals (Sections 01 78 23 and 01 78 39)

END OF SECTION 01 33 00



CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_

SUBMITTAL DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Check following as applicable:

ARCHITECT: Tetra Tech Architects & Engineers

☐ First Submission

**PROJECT IDENTIFICATION**

☐ Re-Submission No. \_\_\_\_

Architect's  
Project No.: 17597-22002

Proj. Name: Reconstruction to Plattekill ES

Location: Walkill, New York

**PRODUCT IDENTIFICATION**

Specification Section No. \_\_\_\_\_

Name of Product: \_\_\_\_\_

Name of Manufacturer: \_\_\_\_\_

**SUBCONTRACTOR**

**SUPPLIER**

**RELATIONSHIP TO STRUCTURE**

Building  
Name \_\_\_\_\_

(Room #) \_\_\_\_\_ (Room Name) \_\_\_\_\_

Contract Drawing No.: \_\_\_\_\_

RESERVED FOR USE BY TETRA TECH

**ACTION SUBMITTAL:**

☐ Approved

☐ Approved As Noted

☐ Rejected

☐ Incomplete, Submit Additional Information

**INFORMATIONAL SUBMITTAL:**

☐ No Action Taken

☐ Returned for Resubmittal

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review 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. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

**DEVIATION FROM CONTRACT DOCUMENTS:** \_\_\_\_\_

**CONTRACTOR COMMENTS:** \_\_\_\_\_

**ARCHITECT'S COMMENTS:** \_\_\_\_\_

**CONTRACTOR'S STAMP**

**CONTRACTOR'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY \_\_\_\_\_

**CONSTRUCTION MANAGER'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS.

BY \_\_\_\_\_

CM Submittal No. \_\_\_\_\_





**TETRA TECH**  
ARCHITECTS & ENGINEERS

## As-Specified Verification Form

Project Number: 17597-22002

Project Title: Reconstruction to Plattekill ES

Technical  
Specification Section: \_\_\_\_\_  
(Include Section Number and Title as shown in Project Manual)

Specified Product: \_\_\_\_\_  
(Include manufacturer's name and product designation)

The undersigned, hereinafter called the Contractor, hereby warrants that the Specified Product listed above will be incorporated into the Project in accordance with requirements specified in the Technical Specification Section identified above without modification or alteration.

By acceptance of this form, Tetra Tech Architects & Engineers (hereinafter called Tetra Tech), agrees that limited submittals identified in the Technical Specification Section identified above are not required, unless otherwise stated in the Submittals article in the Technical Specification Section.

The Contractor is advised that use of this As-Specified Verification Form does not relieve the Contractor from providing remaining submittal documentation required in Technical Specification sections and all information required in Division 1 Closeout section of the Project Manual or from complying with requirements of the General Conditions.

Products/Materials are free of asbestos as required by the Contract Documents.

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Title of Signatory)

\_\_\_\_\_  
(Date)

### RESERVED FOR USE BY TETRA TECH

#### ACTION SUBMITTAL:

- ☐ Approved / Approved As Noted  
☐ Rejected

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review 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. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

**ARCHITECT'S COMMENTS:** \_\_\_\_\_



CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_

SUBMITTAL DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Check following as applicable:

☐ First Submission \_\_\_\_

☐ Re-Submission No. \_\_\_\_

ARCHITECT: Tetra Tech Architects & Engineers

**PROJECT IDENTIFICATION**

Architect's  
Project No.: 17597-22002

Proj. Name: Reconstruction to Plattekill ES

Location: Wallkill, New York

**PRODUCT IDENTIFICATION**

Specification Section No. 01 78 23 OR 01 78 39 (circle correct one)

Name of Product: \_\_\_\_\_

Name of Manufacturer: \_\_\_\_\_

**SUBCONTRACTOR:** \_\_\_\_\_

**SUPPLIER:** \_\_\_\_\_

RESERVED FOR USE BY TETRA TECH

**INFORMATIONAL SUBMITTAL:**

☐ No Action Taken

☐ Returned for Resubmittal

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review 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. Review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences or procedures.

**DEVIATION FROM CONTRACT DOCUMENTS:** \_\_\_\_\_

**CONTRACTOR COMMENTS:** \_\_\_\_\_

**CONSTRUCTION MANAGER'S COMMENTS:** \_\_\_\_\_

**ARCHITECT'S COMMENTS:** \_\_\_\_\_

**CONTRACTOR'S STAMP**

**CONTRACTOR'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY \_\_\_\_\_

**CONSTRUCTION MANAGER'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS. AND IN ACCORDANCE WITH THE CONSTRUCTION MANAGER'S CONTRACTUAL OBLIGATIONS WITH THE OWNER.

Approved \_\_\_\_\_ Rejected \_\_\_\_\_

BY \_\_\_\_\_

CM Submittal No. \_\_\_\_\_



CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_

SUBMITTAL DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_

Check following as applicable:

CONSULTANT: \_\_\_\_\_

☐ First Submission \_\_\_\_

☐ Re-Submission No. \_\_\_\_

**PROJECT IDENTIFICATION**

Architect's  
Project No.: 17597-22002

Proj. Name: Reconstruction Wallkill Central School District

Location: Wallkill, New York

**PRODUCT IDENTIFICATION**

Specification Section No. \_\_\_\_\_

Name of Product: \_\_\_\_\_

Name of Manufacturer: \_\_\_\_\_

**SUBCONTRACTOR:**

**SUPPLIER:**

**RELATIONSHIP TO STRUCTURE:**

Building Name: \_\_\_\_\_

(Room #)

(Room Name)

Contract Drawing No.: \_\_\_\_\_

**DEVIATION FROM CONTRACT DOCUMENTS:**

**CONTRACTOR COMMENTS:**

**OWNER'S CONSULTANT COMMENTS:**

**CONTRACTOR'S STAMP**

**CONTRACTOR'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL CONDITIONS. PRODUCTS/MATERIALS ARE FREE OF ASBESTOS AS REQUIRED BY THE CONTRACT DOCUMENTS.

BY \_\_\_\_\_

**CONSTRUCTION MANAGER'S CERTIFICATION**

I CERTIFY THAT THIS SUBMITTAL HAS BEEN REVIEWED AND APPROVED BY THE CONSTRUCTION MANAGER IN ACCORDANCE WITH THE GENERAL CONDITIONS.

BY \_\_\_\_\_

CM Submittal No. \_\_\_\_\_

Quality Environmental Solutions & Technologies, Inc.  
OWNER'S DIRECT CONSULTANT

**ACTION SUBMITTAL:**

- ☐ Approved
- ☐ Approved As Noted
- ☐ Rejected
- ☐ Incomplete, Submit Additional Information

**INFORMATIONAL SUBMITTAL:**

- ☐ No Action Taken
- ☐ Returned for Resubmittal

Reviewed By: \_\_\_\_\_

Date: \_\_\_\_\_



**SECTION 01 35 26 – GOVERNMENTAL SAFETY REQUIREMENTS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Safety requirements included in 8 NYCRR 155.5 Uniform Safety Standards for School Construction and Maintenance Projects.

**1.3 PERFORMANCE REQUIREMENTS**

- A. General Performance: Provide all measures, including (but not limited to) materials, equipment, and procedures, required to comply with following requirements of 8 NYCRR 155.5 Uniform Safety Standards for School Construction and Maintenance Projects.
- B. Certificate of Occupancy:
  - 1. 8 NYCRR 155.5 (a): “The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.”
- C. General Safety and Security Standards for Construction Projects:
  - 1. 8 NYCRR 155.5 (e)(1): “All construction materials shall be stored in a safe and secure manner.”
  - 2. 8 NYCRR 155.5 (e)(2): “Fences around construction supplies or debris shall be maintained.”
  - 3. 8 NYCRR 155.5 (e)(3): “Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.”
  - 4. 8 NYCRR 155.5 (e)(4): “During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.”
  - 5. 8 NYCRR 155.5 (e)(5): “Workers shall be required to wear photo identification badges at all times for identification and security purposes while working at occupied sites.”



D. Separation of Construction Areas from Occupied Spaces:

1. 8 NYCRR 155.5 (f): “Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.”
2. 8 NYCRR 155.5 (f)(1): “A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs or elevators designated for students or school staff.”

E. Cleaning Occupied Areas:

1. 8 NYCRR 155.5 (f)(2): “Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.”
2. 8 NYCRR 155.5 (f)(3): “All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.”

F. Exiting and Ventilation:

1. 8 NYCRR 155.5(g): Maintain exiting and ventilation during school construction projects.
2. 8 NYCRR 155.5(g)(1): “Required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times.”
3. 8 NYCRR 155.5(g)(2): “Required ventilation to occupied spaces affected by construction will be maintained during the project.”

G. Noise Control:

1. 8 NYCRR 155.5 (i): “Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken.”

H. Control of Fumes, Gases and Contaminants:

1. 8 NYCRR 155.5 (j): The contractor shall be responsible for the control of chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, and other fumes to ensure they do not enter occupied portions of the building or air intakes.



I. “Off-Gassing” of Volatile Organic Compounds:

1. 8 NYCRR 155.5 (j)(1): The contractor shall be responsible to ensure that activities and materials which result in "off-gassing" of volatile organic compounds such as glues, paint, furniture, carpeting, wall coverings, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturer’s recommendations before a space can be occupied.

J. Asbestos Isolation:

1. 8 NYCRR 155.5 (k): “Large and small asbestos abatement projects as defined by 12 NYCRR 56 shall not be performed while the building is occupied.” Note, it is NYSED’s interpretation that the term "building", as referenced in this section of 8 NYCRR 155.5, means a wing or major section of a building that can be completely isolated from the rest of the building with sealed non-combustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion and ventilation systems must be physically separated and sealed at the isolation barrier.
2. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required, and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.

K. Lead and Asbestos Testing:

1. 8 NYCRR 155.5 (c)(1): “All school areas to be disturbed during renovation or demolition shall be tested for lead and asbestos.”
  - a. Asbestos and Asbestos-Containing Materials:
    - 1) Be advised that disturbance of asbestos and asbestos-containing materials is not anticipated as part of this Project.
      - a) Prior to beginning Work, review Owner’s “Asbestos Management Plan” to ensure asbestos or asbestos-containing materials identified in that document are not disturbed.
    - 2) Be advised that if materials suspected to be asbestos, or to contain asbestos, that are not included in the Project and not identified in the Contract Documents are encountered during construction, immediately notify Owner and take precautions as required to avoid disturbing materials until directed by Owner.
    - 3) Transmission Electron Microscopy (TEM): All asbestos abatement work that requires clearance air sampling in accordance with New York State Industrial Code Rule 56 shall have clearance air samples collected and analyzed using Transmission Electron Microscopy as per the Asbestos Hazard Emergency Response Act (40 CFR 763). Refer to Division 02 Section “Asbestos Abatement”.



b. Lead and Lead-Containing Materials:

- 1) Be advised that a lead inspection has been performed as required by New York State Education Department and a copy of the lead inspection report is available at the Owner's offices.

L. Code Rule 56:

1. 8 NYCRR 155.5(k): "All asbestos abatement projects shall comply with all applicable Federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56 (12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act (AHERA), 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at the Office of Facilities Planning, Education Building Annex, Room 360, State Education Department, Albany, NY 12234."

M. Lead:

1. 8 NYCRR 155.5 (l): Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.
  - a. Be advised that disturbance of lead and lead-containing materials is not anticipated as part of this Project.
  - b. Contractor is responsible for complying with requirements of all applicable federal, state and local regulations, including (but not limited to) OSHA Lead in Construction Standard 29 CFR 1926.62, when construction activities involve disturbance of materials containing 1.0 mg/sq cm or 0.5 percent of lead or less, including (but not limited to) lead-based paint, ceramic tile, and similar materials.
  - c. If materials suspected to contain lead above 1.0 mg/sq cm or above 0.5 percent that are not included in Project or identified in Contract Documents are encountered during construction, immediately notify Owner and take applicable precautions to avoid disturbing materials until directed by Owner.

N. Disposal of Lead Abatement Waste:

1. Test all debris from lead abatement activities to determine whether it is hazardous or non-hazardous waste.
2. Transport and dispose of debris determined to be hazardous waste in accordance with applicable regulations.
3. Package, label, and mark all hazardous waste materials in accordance with applicable requirements of 49 CFR 173, 178 and 179.



4. Maintain hazardous waste manifest from date of transport until date of disposal, destruction or recycling.
5. Return fully executed hazardous waste manifests to Owner within 60 days after date waste accepted by initial transporter.
6. Dispose of material determined to be Construction and Demolition Debris in accordance with 6 NYCRR 360 and 364. Provide trip tickets or other documentation clearly identifying generating site, Owner, transporter, disposal site and amount of material removed from site, transported to and disposed of at disposal site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 35 26



## **SECTION 01 40 00 - QUALITY REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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 inspecting 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 -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

#### **1.3 DEFINITIONS**

- A. 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.
- B. 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. Services do not include contract enforcement activities performed by Architect or Construction Manager.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- D. 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, and similar operations.



- E. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of 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.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. 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. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

#### 1.5 SUBMITTALS

- A. Informational Submittals:
  - 1. 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.
  - 2. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
    - a. Specification Section number and title.
    - b. Entity responsible for performing tests and inspections.
    - c. Description of test and inspection.
    - d. Identification of applicable standards.
    - e. Identification of test and inspection methods.
    - f. Number of tests and inspections required.
    - g. Time schedule or time span for tests and inspections.

#### 1.6 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. Permits, Licenses, and Certificates: For Owner's records, 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.

## 1.7 QUALITY ASSURANCE

- A. General: 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.
- 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, 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 are similar in material, design, and extent to those indicated for this Project.
- F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.



- G. 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.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. 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 in location and of size indicated or, if not indicated, as directed by Architect or Construction Manager.
  - 2. Notify Architect and Construction Manager seven days in advance of dates and times when mockups will be constructed.
  - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
  - 4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
  - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  - 6. Demolish and remove mockups when directed unless otherwise indicated.

## 1.8 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 inspecting they are engaged to perform.
  - 2. 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 required to verify that the Work complies with requirements, whether specified or not.
  - 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. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting 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 inspecting 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. **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 Division 01 Section "Submittal Procedures."
- D. **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.
- E. **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.
- F. **Associated Services:** Cooperate with agencies 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 inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  6. Security and protection for samples and for testing and inspecting equipment at Project site.



- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
  - 1. Distribution: Distribute schedule to Owner, Architect, **Construction Manager**, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

## 1.9 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, as indicated in Statement of Special Inspections attached to this Section, and as follows:
  - 1. Notifying Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  - 2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
  - 3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  - 4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  - 5. Retesting and reinspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: 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 revisions as they occur. Provide access to test and inspection log for Architect's and Construction Manager'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 Division 01 Section "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.

Attachment: Statement of Special Inspections

END OF SECTION 01 40 00





**TETRA TECH**  
ARCHITECTS & ENGINEERS

## STATEMENT OF SPECIAL INSPECTIONS

Project: *Wallkill CSD – 2022 Capital Project – Phase 2B*

Location: *Wallkill, NY*

Owner: *Wallkill Central School District*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code of New York State. It includes a schedule of Special Inspection services applicable to this project. *Refer to individual technical specification sections for additional testing requirements.*

This document includes the following parts:

*Qualifications of Inspectors and Testing Technicians*

*Schedule of Special Inspection Services*



## **Qualifications of Inspectors and Testing Technicians**

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The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

### **Key for Minimum Qualifications of Inspection Agents:**

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Qualifications* on the Schedule.

PE	Structural Engineer – a licensed PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

#### **American Concrete Institute (ACI) Certification**

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

#### **American Welding Society (AWS) Certification**

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

#### **American Society of Non-Destructive Testing (ASNT) Certification**

ASNT	Non-Destructive Testing Technician – Level II or III.
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#### **International Code Council (ICC) Certification**

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

#### **National Institute for Certification in Engineering Technologies (NICET)**

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

#### **Association of the Wall and Ceilings Industries International (AWCI)**

AWCI 12-B	Standard Practice for the Testing and Inspection of Field Applied Thin-Film Intumescent Fire-Resistive Materials; an Annotated Guide.
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## Schedule of Special Inspection Services

INSPECTION AND TESTING  <i>("Continuous" &amp; "Periodic" defined by the Code; refer to applicable Technical Specification Section for specific frequency requirements)</i>	REQUIRED <i>(Required if checked; Not Applicable if not checked)</i>	TECHNICAL SPECIFICATION SECTION <i>(Refer to for additional information)</i>	CONTINUOUS	PERIODIC
<b>Cast-in-Place Concrete (1705.3)</b>				
1. Inspection of reinforcing steel and verify placement	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Inspection of reinforcing steel welding:				
a. Verification of ASTM A706 material	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspect single-pass fillet welds, maximum 5/16"	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Inspect all other welds	<input type="checkbox"/>	03 30 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Inspection of anchors to be installed in concrete prior to and during placement	<input type="checkbox"/>	03 30 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Inspect anchors post-installed in hardened concrete				
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	<input type="checkbox"/>	03 30 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Mechanical anchors and adhesive anchors not defined in 4a.	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Verify use of required design mix	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Sampling fresh concrete for fabricating specimens for strength testing, perform slump and air content tests, and measure temperature of concrete	<input type="checkbox"/>	03 30 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Inspection of concrete and shotcrete placement for proper application techniques	<input type="checkbox"/>	03 30 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Verify maintenance of specified curing temperature and techniques	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete, and prior to removal of shores and forms from beams and structural slabs	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Inspection of formwork for shape, location and dimensions of the concrete member being formed	<input type="checkbox"/>	03 30 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Inspection of post-tensioning operations	<input type="checkbox"/>	03 38 16	<input checked="" type="checkbox"/>	<input type="checkbox"/>



<b>Precast Concrete (1705.3)</b>				
1. Inspection of reinforcing steel	<input type="checkbox"/>	03 41 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Verify use of required design mix	<input type="checkbox"/>	03 41 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Inspection of prestressed operations				
a. Application of prestressing forces	<input type="checkbox"/>	03 41 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system	<input type="checkbox"/>	03 41 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Sampling fresh concrete; slump, air content, temperature, strength test specimens	<input type="checkbox"/>	03 41 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Inspection of formwork for shape, location and dimensions of the concrete member being formed	<input type="checkbox"/>	03 41 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Inspection of concrete placement for proper application techniques	<input type="checkbox"/>	03 41 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Inspection for maintenance of specified curing temperature and techniques	<input type="checkbox"/>	03 41 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Erection of precast concrete members	<input type="checkbox"/>	03 41 00, 03 48 10	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Fabricated Items (1704.2.5 and 1705.10)</b>				
1. Inspection of structural, load-bearing or lateral load-resisting members or assemblies as noted on Contract Documents that are fabricated in a fabricator's shop	<input type="checkbox"/>	?? ?? ??	<input type="checkbox"/>	<input type="checkbox"/>
Exceptions:				
a. The fabricator has been approved to perform work without special inspections per NYSBC 1704.2.5.1.				
b. The members or assemblies are to be fabricated on site. Then refer to the respective material categories for inspections.				



<b>Masonry (1705.4)</b>				
<b>Level 1</b>	<input type="checkbox"/>	04 20 00		
1. Prior to construction, verify certificates of compliance used in masonry construction	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
<b>Level 2 Level 3</b>	<input checked="" type="checkbox"/> Level 2 <input type="checkbox"/> Level 3	04 20 00		
1. Prior to construction, verify compliance with the approved submittals.	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
2. Prior to construction, verify $f'm$ , except where specifically exempted by the Code	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
3. During construction, verify Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
4. During construction, verify $f'm$ for every 5,000 sqft	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
5. During construction, verify proportions of materials in premixed or preblended mortar, and grout other than self-consolidating grout, as delivered to the project site.	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input type="checkbox"/>
6. At start of masonry construction, verify to ensure compliance:				
a. Proportions of site prepared mortar.	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Grade, type and size of reinforcement, connectors, and anchor bolts.	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Sample panel construction.	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Prior to grouting, verify that the following are in compliance:				
a. Grout space	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Placement of reinforcement, connectors, and anchor bolts	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Proportions of site-prepared grout	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. During construction, verify compliance of the following:				
a. Materials and procedures with the approved submittals.	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Placement of masonry units and mortar joint construction.	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Size and location of structural members.	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Type, size and location of anchors including anchorage of masonry to structural members, frames or other construction	<input type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Welding of reinforcing bars	<input type="checkbox"/>	04 20 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Preparation, construction and protection of masonry during cold or hot weather	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Placement of grout.	<input checked="" type="checkbox"/>	04 20 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Observe preparation of grout specimens, mortar specimens and/or prisms	<input checked="" type="checkbox"/>	04 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>



<b>Structural Steel (1705.2.1)</b>				
1. Minimum inspections prior to welding per AISC 360 (including but not limited to material verification, welder qualification and fit-up of joints).	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Minimum inspections during welding per AISC 360	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a. Placement and installation of steel headed stud anchors	<input type="checkbox"/>	05 12 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Verification of ASTM A 706 material	<input type="checkbox"/>	05 12 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Testing of resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	<input type="checkbox"/>	05 12 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Minimum inspections after welding per AISC 360 (including but not limited to size, length and location of welds; welds meet visual acceptance criteria; and repair activities)	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Inspection of welding via UT for CJP groove welds subject to transversely applied tension loading in butt, T-, and Corner joints				
a. Risk Category III or IV structures	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Risk Category II structures	<input type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Minimum inspections prior to high-strength bolting (except for snug-tight joints) per AISC 360 (including but not limited to material verification of high-strength bolts, nuts, and washers; and bolting procedures)	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Minimum inspections during high-strength bolting (except for snug-tight joints) per AISC 360 (included but not limited to assemblies and positioning)	<input checked="" type="checkbox"/>	05 50 00		
a. For pretension/slip-critical connections using turn-of-nut with match marking method, direct-tension-indicator method, or twist-off-type tension control bolt method.	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. For pretension/slip-critical connections using calibrated wrench method or turn-of-nut method without matchmarking	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Minimum inspections after high-strength bolting per AISC 360	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Inspection of fabricated and/or erected steel to verify compliance with the construction drawings.	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a. Details such as bracing and stiffeners	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Member locations	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Joint details	<input checked="" type="checkbox"/>	05 50 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Inspection during placement of anchor rods and other embedded items supporting structural steel for compliance with construction drawings.	<input checked="" type="checkbox"/>	05 50 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Material verification of structural steel: Identification markings to conform to ASTM standards specified in the approved construction documents	<input type="checkbox"/>	05 12 00	<input type="checkbox"/>	<input type="checkbox"/>



<b>Open-Web Steel Joists and Joist Girders (1705.2.3)</b>				
1. Installation of open-web steel joists and joist girders				
a. End connections – welded or bolted per SJI	<input checked="" type="checkbox"/>	05 21 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Bridging – horizontal or diagonal				
1. Standard bridging per SJI	<input checked="" type="checkbox"/>	05 21 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Bridging that differs from SJI specification	<input checked="" type="checkbox"/>	05 21 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Cold-Formed Steel Deck (1705.2.2)</b>				
1. Inspection or Execution Tasks Prior to Deck Placement per SDI QA/QC (including but not limited to compliance of materials with construction documents)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Inspection or Execution Tasks After to Deck Placement per SDI QA/QC (including but not limited to compliance of installation with construction documents)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Inspection or Execution Tasks Prior to Welding per SDI QA/QC (including but not limited to verification of procedures and certifications)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Inspection or Execution Tasks During Welding per SDI QA/QC	<input type="checkbox"/>	05 31 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Inspection or Execution Tasks After Welding per SDI QA/QC (including but not limited to size, length and location of welds; welds meet visual acceptance criteria; and repair activities)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Inspection or Execution Tasks Prior to Mechanical Fastening per SDI QA/QC (including but not limited to material verification)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Inspection or Execution Tasks During Mechanical Fastening per SDI QA/QC (including but not limited to verification of positioning and installation)	<input type="checkbox"/>	05 31 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Inspection or Execution Tasks After Mechanical Fastening per SDI QA/QC (including but not limited to verification of spacing, type and location; repair activities)	<input type="checkbox"/>	05 31 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Cold-Formed Steel Trusses (1705.2.4)</b>				
1. For trusses spanning 60 feet or greater:				
a. Verify the temporary installation restraint/bracing is installed per the approved truss submittal package.	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Verify the permanent individual truss member restraint/bracing is installed per the approved truss submittal package.	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>



<b>Wood Construction (170505)</b>				
1. For Metal-plate connected wood trusses spanning 60 feet or greater:				
a. Verify the temporary installation restraint/bracing is installed per the approved truss submittal package.	<input type="checkbox"/>	06 10 00, 06 16 00, 06 17 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Verify the permanent individual truss member restraint/bracing is installed per the approved truss submittal package.	<input type="checkbox"/>	06 10 00, 06 16 00, 06 17 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Inspect High-load diaphragms for grade and thickness of sheathing material; nominal size of framing members; fastener diameter and length; fastener layout and spacing	<input type="checkbox"/>	06 10 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Exterior Insulation and Finish Systems (EIFS) (1705.16)</b>				
Not required if water-resistive barrier is installed with a means of draining moisture to the exterior. Also not required for EIFS applications over masonry or concrete walls.	<input type="checkbox"/>	07 24 13	<input type="checkbox"/>	<input type="checkbox"/>
1. Inspection of water-resistive batter coating when installed over a sheathing substrate.				

<b>Sprayed Fire-resistant Materials (1705.14)</b>				
1. Verify surface preparation in accordance with manufacturer's written instructions.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
2. Verify temperature and area ventilation before and after application in accordance with manufacturer's written instructions.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
3. Verify thickness of sprayed fire-resistant materials				
a. Minimum of 4 measurements per 1,000 sq ft of floor, roof and wall assembly areas, or part thereof at each story.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
b. Minimum of 25% of structural members at each story.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
4. Verify density of sprayed fire-resistant materials.				
a. Minimum of one sample per 2,500 sq ft of floor, roof and wall assembly areas, or part thereof at each story.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
b. Minimum of one sample from each type of structural framing member per 2,500 sq ft of floor area or part thereof at each story.				
5. Verify cohesive/adhesive bond strength of sprayed fire-resistant materials.				
a. Minimum of one sample per 2,500 sq ft of floor, roof and wall assembly areas or part thereof at each story.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
b. Minimum of one sample from each type of structural framing member per 2,500 sq ft of floor area or part thereof at each story.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>
c. Bond tests to qualify a primer, paint, or encapsulant when acceptable bond strength performance between those coatings and the fire-resistant material has not been determined.	<input type="checkbox"/>	07 81 00	<input type="checkbox"/>	<input type="checkbox"/>



<b>Mastic and Intumescent Fire-resistant Coatings (1705.15)</b>				
1. Verify surface preparation, application, and thickness when applied to structural elements and decks in accordance with AWCI 12-B	<input type="checkbox"/>	07 81 23	<input type="checkbox"/>	<input type="checkbox"/>

<b>Fire-Resistant Penetrations and Joints (1705.17)</b>				
1. Inspection of through-penetrations and membrane penetration firestops in buildings in Risk Category III or IV per ASTM E2174	<input type="checkbox"/>	07 84 13	<input type="checkbox"/>	<input type="checkbox"/>
2. Inspections of fire-resistant joint systems and perimeter fire barrier systems in buildings in Risk Category III or IV per ASTM E2393	<input type="checkbox"/>	07 84 43, 07 95 13.13	<input type="checkbox"/>	<input type="checkbox"/>

<b>Soils (1705.6)</b>				
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	<input type="checkbox"/>	31 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Verify excavations are extended to proper depth and have reached proper material	<input type="checkbox"/>	31 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Perform classification and testing of compacted fill materials	<input type="checkbox"/>	31 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	<input type="checkbox"/>	31 20 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	<input type="checkbox"/>	31 20 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Driven Deep Foundations (1705.7)</b>				
1. Verify element materials, sizes and lengths comply with the requirements	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Determine capacities of test elements and conduct additional load tests, as required	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Inspect driving operations and maintain complete and accurate records for each element	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. For steel elements, perform additional special inspections in accordance with 1705.2	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input type="checkbox"/>	<input type="checkbox"/>
6. For concrete elements and concrete-filled elements, perform additional special inspections in accordance with Section 1705.3	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input type="checkbox"/>	<input type="checkbox"/>
7. For specialty elements, perform additional inspections	<input type="checkbox"/>	31 62 13, 31 62 16, 31 62 19, 31 22 23	<input type="checkbox"/>	<input type="checkbox"/>



<b>Cast-In-Place Deep Foundations (1705.8)</b>				
1. Inspect drilling operations and maintain complete and accurate records for each element	<input type="checkbox"/>	03 30 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end bearing strata capacity. Record concrete or grout volumes.	<input type="checkbox"/>	03 30 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3	<input type="checkbox"/>	03 30 00	<input type="checkbox"/>	<input type="checkbox"/>

<b>Helical Pile Foundations (1705.9)</b>				
1. Inspect installation operations and maintain complete and accurate records for each pier	<input type="checkbox"/>	??	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Verify and record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque other data as required	<input type="checkbox"/>	??	<input checked="" type="checkbox"/>	<input type="checkbox"/>



<b>Wind Resistance Inspections (1705.11)</b>				
1. Structural wood – of elements in main windforce-resisting system				
a. Inspection of gluing operations.	<input type="checkbox"/>	06 10 00, 06 16 00, 06 17 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Inspection of nailing, bolting, anchoring and other fastening	<input type="checkbox"/>	06 10 00, 06 16 00, 06 17 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Cold-formed steel light-frame construction – of elements in main windforce-resisting systems.				
a. Inspection of welding operations	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspection of screw attachment, bolting, anchoring and other fastening	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wind-resisting components:				
a. Inspection of roof covering, roof deck and roof framing connections	<input type="checkbox"/>	05 12 00, 05 21 00, 05 31 00, 07 53 23	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspection of exterior wall covering and wall connections to roof and floor diaphragms and framing	<input type="checkbox"/>	04 20 00, 07 24 13, 08 41 13, 08 44 13	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>Seismic Resistance Inspections (1705.12)</b>				
1. Structural steel:				
<a href="#">SDC B, C, D, E, or F – refer to 1705.12.1.1 for exceptions</a>	<input type="checkbox"/>	05 12 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
a. Seismic force-resisting systems – inspection in accordance with AISC 341				
<a href="#">SDC B (R&gt;3), C (R&gt;3), D, E, or F</a>	<input type="checkbox"/>	05 12 00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Structural steel elements - inspection in accordance with AISC 341				
<a href="#">SDC C, D, E, or F, refer to 1705.12.2 for exceptions</a>				
2. Structural wood, seismic-force-resisting systems:				
a. Inspection of field gluing operations.	<input type="checkbox"/>	06 10 00, 06 17 00, 06 17 53	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Inspection of nailing, bolting, anchoring and other fastening	<input type="checkbox"/>	06 10 00, 06 17 00, 06 17 53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">SDC C, D, E, or F, refer to 1705.12.3 for exceptions</a>				
3. Cold-formed steel framing - of elements in seismic-force-resisting systems				
a. Inspection of welding operations of seismic-force-resisting systems	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspection of screw attachment, bolting, anchoring and other fastening	<input type="checkbox"/>	05 40 00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<a href="#">SDC C, D, E or F; coord with 13.2.2 of ASCE 7</a>	<input type="checkbox"/>	??	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Designated seismic systems – Inspection systems requiring Seismic Qualification per ASCE 7. Verify label, anchorage and mounting conforms to certificate of compliance				



5. Architectural components				
a. Inspection of erection and fastening of exterior cladding	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspection of erection and fastening of interior and exterior nonbearing walls	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Inspection of erection and fastening of interior and exterior veneer	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Access floors – inspection of anchorage	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Mechanical and electrical components:				
SDC C, D, E or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
a. Inspection of anchorage of electrical equipment for emergency power systems	<input type="checkbox"/>			
SDC E or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Inspection of anchorage installation or other electrical equipment	<input type="checkbox"/>			
SDC C, D, E or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Inspection of installation and anchorage of piping systems and associated mechanical units designed to carry hazardous materials	<input type="checkbox"/>			
SDC C, D, E, or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Inspection of installation and anchorage of ductwork designed to carry hazardous materials	<input type="checkbox"/>			
SDC, C, D, E, or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
e. Inspection of installation and anchorage of vibration isolation systems	<input type="checkbox"/>			
SDC, C, D, E, or F			<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. Inspection of installation of mechanical and electrical equipment where automatic fire sprinkler systems are installed to verify clearances	<input type="checkbox"/>			
SDC B, C, D, E or F	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Seismic isolation system: Inspection during fabrication and installation of isolator units and energy dissipation devices that are part of the seismic isolation system				
SDC D, E or F	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Cold-formed steel special bolted moment frames: Inspection during installation of frames part of the seismic isolation system				



<b>Seismic Resistance Structural Testing</b>				
1. Structural steel:				
SDC B, C, D, E, or F		05 12 00	<input type="checkbox"/>	<input type="checkbox"/>
a. Seismic force-resisting systems: Non-destructive testing in accordance with quality assurance requirements of AISC 341	<input type="checkbox"/>			
b. Structural steel elements: nondestructive testing in accordance with the quality assurance requirements of AISC 341	<input type="checkbox"/>	05 12 00	<input type="checkbox"/>	<input type="checkbox"/>
SDC B, C, D, E, or F			<input type="checkbox"/>	<input type="checkbox"/>
2. Nonstructural Components: Confirm certification of compliance of seismic qualification for supports and attachments has been submitted by manufacturer for specified systems	<input type="checkbox"/>			
SDC C, D, E or F		??	<input type="checkbox"/>	<input type="checkbox"/>
3. Designated seismic systems: Confirm certification of compliance of seismic qualification has been submitted for designated seismic systems	<input type="checkbox"/>			
SDC B, C, D, E, or F			<input type="checkbox"/>	<input type="checkbox"/>
4. Seismic isolation systems: Testing per ASCE 7, Section 17.8	<input type="checkbox"/>			

<b>Structural Observations</b>				
One or more of: RC IV; high-rise building; special structures as determined by RDP; required by building official	<input type="checkbox"/>			
1. Structural observations for structures				
SDC D, E, or F where RC III or IV or SDC E where RC I or II and > 2 stories above grade plane	<input type="checkbox"/>			
2. Structural observations for seismic resistance				
V = 130 mph or greater and RC III or IV	<input type="checkbox"/>			
3. Structural observations for wind resistance				



## **SECTION 01 42 00 - REFERENCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 DEFINITIONS**

- A. "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.
- B. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- C. "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."
- D. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- E. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project Site.
- F. "Provide": Furnish and install, complete and ready for the intended use.

#### **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. When the building code in effect for the Project cites a different edition, comply with the building code-cited edition.
- C. 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 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. AA - Aluminum Association (The); [www.aluminum.org](http://www.aluminum.org).
2. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
3. AAMA - American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
4. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
5. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
6. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
7. ABBA - Air Barrier Association of America; [www.airbarrier.org](http://www.airbarrier.org).
8. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
9. ACI - American Concrete Institute; (Formerly: ACI International); [www.concrete.org](http://www.concrete.org).
10. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
11. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
12. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
13. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
14. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
15. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
16. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
17. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
18. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
19. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
20. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
21. ALSC - American Lumber Standard Committee, Incorporated; [www.alsc.org](http://www.alsc.org).
22. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
23. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
24. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
25. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
26. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
27. API - American Petroleum Institute; [www.api.org](http://www.api.org).
28. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
29. ARI - American Refrigeration Institute; (See AHRI).
30. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
31. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
32. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
33. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
34. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
35. ASNT - American Society for Nondestructive Testing (The); [www.asnt.org](http://www.asnt.org).
36. ASSE - American Society of Safety Engineers (The); [www.asse.org](http://www.asse.org).
37. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
38. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
39. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
40. AWCI - Association of the Wall and Ceiling Industry; [www.awci.org](http://www.awci.org).



41. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
42. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
43. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
44. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
45. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
46. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
47. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
48. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
49. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
50. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.com](http://www.bifma.com).
51. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
52. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bwfbadminton.org](http://www.bwfbadminton.org).
53. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
54. CE – Conformite Europeenne; <http://ec.europa.eu/growth/single-market/ce-marking/>.
55. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
56. CEA - Consumer Electronics Association; [www.ce.org](http://www.ce.org).
57. CFFA - Chemical Fabrics & Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
58. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
59. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
60. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
61. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
62. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
63. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
64. CPA - Composite Panel Association; [www.pbmdf.com](http://www.pbmdf.com).
65. CPPA – (Formerly: Corrugated Polyethylene Pipe Association; a Division of the Plastic Pipe Institute); [www.plasticpipe.org/drainage/](http://www.plasticpipe.org/drainage/).
66. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
67. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
68. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
69. CSA - Canadian Standards Association; [www.csa.ca](http://www.csa.ca).
70. CSA - CSA International; (Formerly: IAS - International Approval Services); [www.csa-international.org](http://www.csa-international.org).
71. CSI - Construction Specifications Institute (The); [www.csinet.org](http://www.csinet.org).
72. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
73. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.cti.org](http://www.cti.org).
74. CWC - Composite Wood Council; (See CPA).
75. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
76. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
77. ECA - Electronic Components Association;(See ECIA).
78. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
79. ECIA – Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).
80. EIA - Electronic Industries Alliance; (See TIA).
81. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
82. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
83. ESD - ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
84. ESTA - Entertainment Services and Technology Association; (See PLASA).
85. ETL - Intertek (See Intertek); [www.intertek.com](http://www.intertek.com).
86. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).



87. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
88. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
89. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
90. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
91. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; [www.floridarroof.com](http://www.floridarroof.com).
92. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
93. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
94. FSEC - Florida Solar Energy Center; [www.fsec.ucf.edu](http://www.fsec.ucf.edu).
95. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
96. GANA - Glass Association of North America; [www.glasswebsite.com](http://www.glasswebsite.com).
97. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
98. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
99. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
100. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
101. HPVA - Hardwood Plywood & Veneer Association; [www.hpva.org](http://www.hpva.org).
102. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
103. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
104. IAS – International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
105. IAS - International Approval Services; (See CSA).
106. ICBO - International Conference of Building Officials; (See ICC).
107. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
108. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
109. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
110. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
111. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
112. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
113. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
114. IESNA - Illuminating Engineering Society of North America; (See IES).
115. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
116. IGCC - Insulating Glass Certification Council; [www.igcc.org](http://www.igcc.org).
117. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
118. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.okstate.edu](http://www.igshpa.okstate.edu).
119. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
120. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
121. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
122. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
123. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
124. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
125. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
126. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
127. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
128. LMA - Laminating Materials Association; (See CPA).
129. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).



130. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
131. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
132. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
133. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
134. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
135. MIA - Marble Institute of America; [www.marble-institute.com](http://www.marble-institute.com).
136. MPPA - Moulding & Millwork Producers Association; (Formerly: Wood Moulding & Millwork Producers Association); [www.wmmpa.com](http://www.wmmpa.com).
137. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
138. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
139. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
140. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
141. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
142. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
143. NALP - National Association of Landscape Professionals (Formerly Professional Landcare Network); [www.landscapeprofessionals.org](http://www.landscapeprofessionals.org).
144. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
145. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
146. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
147. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
148. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
149. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
150. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
151. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
152. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
153. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
154. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
155. NFPA - NFPA International; (See NFPA).
156. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
157. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
158. NICET - National Institute for Certification in Engineering Technologies; [www.nicet.org](http://www.nicet.org).
159. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
160. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
161. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
162. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
163. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
164. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
165. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
166. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
167. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
168. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
169. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
170. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).
171. PLANET - Professional Landcare Network; (See NALP).
172. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); [www.plasa.org](http://www.plasa.org).
173. PTI - Post-Tensioning Institute; [www.post-tensioning.org](http://www.post-tensioning.org).
174. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).



175. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
176. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
177. SAE - SAE International; [www.sae.org](http://www.sae.org).
178. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
179. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
180. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
181. SEFA - Scientific Equipment and Furniture Association; [www.sefalabs.com](http://www.sefalabs.com).
182. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
183. SGCC - Safety Glazing Certification Council; [www.sgcc.org](http://www.sgcc.org).
184. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
185. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
186. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
187. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
188. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
189. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
190. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
191. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
192. SRCC - Solar Rating and Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
193. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
194. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
195. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
196. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
197. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
198. TABB - Testing, Adjusting and Balancing Bureau; [www.tabbcertified.org](http://www.tabbcertified.org).
199. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
200. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
201. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
202. TIA - Telecommunications Industry Association; (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
203. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
204. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
205. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
206. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
207. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
208. UFAC - Upholstered Furniture Action Council; [www.ufac.org](http://www.ufac.org).
209. UL - Underwriters Laboratories Inc.; [www.ul.com](http://www.ul.com).
210. ULC - Underwriters Laboratories of Canada; [www.ulc.ca](http://www.ulc.ca).
211. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
212. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
213. USBA - United States Badminton Association; [www.usabadminton.org](http://www.usabadminton.org).
214. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
215. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
216. WA - Wallcoverings Association; [www.wallcoverings.org](http://www.wallcoverings.org).
217. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
218. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
219. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
220. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).



221. WI - Woodwork Institute; (Formerly: WIC - Woodwork Institute of California); [www.wicnet.org](http://www.wicnet.org).
222. WMMPA - Wood Moulding & Millwork Producers Association; (See MMPA).
223. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
224. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

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](http://www.iapmo.org).
2. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
3. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).

C. Federal 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. Information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
4. DOD - Department of Defense; <http://quicksearch.dla.mil>.
5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
8. FCC - Federal Communications Commission; [www.fcc.gov](http://www.fcc.gov).
9. FG - Federal Government Publications; [www.gpo.gov](http://www.gpo.gov).
10. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
11. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
12. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; <http://eetd.lbl.gov>.
13. NIST - National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
14. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
15. SD - Department of State; [www.state.gov](http://www.state.gov).
16. TRB - Transportation Research Board; National Cooperative Highway Research Program; [www.trb.org](http://www.trb.org).
17. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
18. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
19. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
20. USP - U.S. Pharmacopeia; [www.usp.org](http://www.usp.org).
21. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).

D. 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. ADAAG - Accessibility Guidelines for Buildings and Facilities, Available from United States Access Board; [www.access-board.gov](http://www.access-board.gov).
2. AHERA - Asbestos Hazard Emergency Response Act, Available from US Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
3. BCNYS - Building Code of New York State, Available from New York State Department of State; [www.dos.ny.gov/DCEA/](http://www.dos.ny.gov/DCEA/).
4. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
5. DOD - Department of Defense; Military Specifications and Standards; Available from Department of Defense Single Stock Point; <http://quicksearch.dla.mil>.
6. DSCC - Defense Supply Center Columbus; (See FS).
7. FED-STD - Federal Standard; (See FS).
8. FS - Federal Specification; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
  - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org/ccb](http://www.wbdg.org/ccb).
9. IBC - International Building Code, Available from International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
10. LEED - Leadership in Energy and Environmental Design (Green Building Rating Systems), Available from U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
11. MILSPEC - Military Specification and Standards; (See DOD).
12. NEC - National Electrical Code, Available from NFPA (National Fire Protection Association); [www.nfpa.org](http://www.nfpa.org).
13. NSPC - National Standard Plumbing Code, Available from Plumbing-Heating-Cooling Contractors Association; [www.phccweb.org](http://www.phccweb.org).
14. NYSED/MPS - New York State Education Department Manual of Planning Standards, Available from New York State Education Department (Facilities Planning); [www.p12.nysed.gov/facplan/forms.html](http://www.p12.nysed.gov/facplan/forms.html).
15. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
16. UFAS - Uniform Federal Accessibility Standards Available from Access Board; [www.access-board.gov](http://www.access-board.gov).
17. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).



E. 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. CBHF - State of California; Department of Consumer Affairs; Bureau of Electronic Appliance and Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
2. NYSDEC - New York State Department of Environmental Conservation; [www.dec.ny.gov](http://www.dec.ny.gov).
3. NYSDOH - New York State Department of Health; [www.health.ny.gov](http://www.health.ny.gov).
4. NYSDOT - New York State Department of Transportation; [www.dot.ny.gov](http://www.dot.ny.gov).
5. NYSED - New York State Education Department (Facilities Planning); [www.p12.nysed.gov/facplan/](http://www.p12.nysed.gov/facplan/).
6. NYSERDA - New York State Energy Research and Development Authority; [www.nyserda.ny.gov](http://www.nyserda.ny.gov).
7. OSHPD - Office of Statewide Health Planning and Development (State of California); [www.oshpd.ca.gov](http://www.oshpd.ca.gov).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00



**SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.
- B. Related Requirements:
  - 1. Division 01 Section 01 10 00 Project Summary-Project Schedule" for responsibilities for temporary facilities and controls for the project.
- C. Temporary utilities include, but are not limited to, the following:
  - 1. Water service and distribution
  - 2. Electric power and lighting
  - 3. Heat
  - 4. Ventilation
  - 5. Sanitary facilities
  - 6. Storm and sanitary sewer
  - 7. Internet service
- D. Support facilities include, but are not limited to, the following:
  - 1. Field offices and storage
  - 2. Construction Manager's field office
  - 3. Dewatering
  - 4. Temporary enclosures
  - 5. Hoists and temporary elevator use
  - 6. Project signs and required notifications
  - 7. Wayfinding signs
  - 8. Waste collection and disposal
  - 9. Pest control
- E. Security and protection facilities include, but are not limited to, the following:
  - 1. Fire protection
  - 2. Barricades, warning signs and lights
  - 3. Environmental protection
  - 4. Tree and plant protection
  - 5. Temporary fencing



6. Temporary enclosures
7. Temporary partitions

### 1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner, Architect, Construction Manager, testing agencies, and authorities having jurisdiction.
- B. Water Service: Use water from the Owner's existing water system if available. If not available, contractor must supply water required for the performance of their work.
- C. Electric Power: Temporary electric power, including set up and maintenance is the responsibility of the Electrical Contractor.
  1. Use of electric power from the Owner's permanent power system (when operational) is available to all contractors without cost.
  2. Electrical Contractor is to provide power to the Construction Manager's job trailer.

### 1.4 SUBMITTALS, GENERAL

- A. General: Submit all informational submittals required by this Section concurrently.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, crane staging areas, vehicle circulation, and phased parking areas for construction personnel.
- B. Implementation and termination schedule: each prime contractor shall submit a schedule indicating their proposed implementation and termination schedule for each temporary utility they are responsible for. This schedule shall be submitted along with the prime contractor's construction schedule.
- C. Shoring and Bracing Plan: Submit shoring and bracing plan, designed, signed and sealed by the qualified professional engineer responsible for its preparation.
- D. Temporary Signage: Provide shop drawings indicating the size, type and proposed location of signs for Construction Manager's review. Temporary and permanent site signage is by the Site Work Contractor.

### 1.6 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 United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
- D. Regulations: The prime contractors shall comply with industry standards and applicable laws and regulations of authorities having jurisdiction.
- E. Standards: The prime contractors shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities".
  - 1. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 11 gauge, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts embedded minimum of 24" in the ground; minimum 1-1/2-inch-ID line posts and 2-1/2-inch-ID corner and pull posts.
- B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.
- C. Plastic Barrier Fencing: High-density polyethylene mesh, high-visibility orange; minimum 4 feet high with minimum 6-foot-long wood stakes spaced a maximum of 8 feet on center, and with a continuous wood top stake; steel wire or nylon cable ties every 12 inches on center; with warning signs as indicated or required.
- D. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches.
- E. 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, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Storage Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.



## 2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Provide temporary heating units that have been tested and labeled by UL, FM or other recognized trade association related to the type of fuel be consumed. Use of permanent HVAC system is not permitted.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. HVAC 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.
    - a. Directly vent all combustion gases to the exterior.
    - b. Design system to use 100 percent outside make-up air.
    - c. 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) Temp-Air, Inc.
- 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.
- D. Temporary Toilet Units: Provide self-contained

## 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.

### 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.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.



### 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. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
  - 1. 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.
  - 2. Provide reduced pressure zone (RPZ) backflow preventer at connection to existing system. Provide appropriate drainage piping with air gap from the backflow preventer relief port to an approved discharge point.
    - a. Basis-of-Design Product: Watts Water Technologies; Series LF909.
  - 3. Provide 3/4-inch hose connections (at each level for multi-storied buildings) spaced so that a 200-foot-long hose will reach all areas of building where a Contractor requires water.
  - 4. Provide sign at each outlet indicating temporary water sources are not for human consumption
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and bottled 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. Use of Owner's toilet facilities and drinking water facilities is not permitted.
  - 1. Provide continual supply of toilet paper, paper towels, soap, and bottled drinking water.
- E. 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. 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.



- F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
    - 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.
- G. Electric Power Service: Electrical Contractor to provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
1. Install electric power service overhead unless otherwise indicated.
  2. Connect temporary service to Owner's existing power source, as directed by Owner. Maintain equipment in a condition acceptable to Owner.
  3. Service Requirements:
    - a. Provide 120/208 V, 60 Hz, single/three phase alternating current with capacity to accommodate maximum electric power and lighting requirements during construction.
    - b. Provide minimum of two each 120/208 V duplex outlets spaced so that a 50-foot-long extension cord will reach all areas of building where a Contractor requires electric power.
  4. Distribution System: Provide poles, pole hardware, overhead, exterior and interior wiring, transformers, and similar items required for electric power service and lighting.
    - a. Single-Phase Wiring: 3-wire, 120/208 V feeders, with No. 12 three- or four-wire branch circuits conforming to NEC No. 210-7 and OSHA requirements, with branch circuit protective device.
      - 1) Provide each branch circuit with 120/208 V, single-phase fused grounding-type power outlets, buss type SRX or SKY, with approved covered box and fuses as required.



- 2) Provide panelboards containing ground fault interrupter type circuit breakers meeting applicable NEC requirements with required number of poles.
  - a) Basis-of-Design Product: Square D by Schneider Electric; QO120GFI for each branch circuit allowing maximum total load of 16 amps on each 20-amp branch circuit.
- 3) Provide appropriately sized green grounding wiring complying with NEC requirements in feeder and branch circuits to provide grounding of all 120 and 208 V outlets in approved manner.
  - b. Three-Phase Wiring: Three-wire, 208 V feeders, with fused disconnect switches, allowing minimum 5 hp motor load at 208 V from each feeder, and providing four three-phase outlets on each floor near points of use.
5. Extension Cords: Each contractor shall provide their own temporary 3-wire plug-in extensions with grounding features at both ends and other special equipment. Welding equipment shall be run from generators.
6. Temporary power shall be energized between 6:50am and 3:40pm daily.
- H. Lighting: Electrical Contractor to provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
  2. Maintain OSHA standards for power and foot candle levels in all work areas requiring temporary lighting.
  3. Temporary lighting shall be energized daily between 6:50am and 3:50pm until permanent fixtures are installed and operational. Temporary lighting system shall not be controlled by any single contractor.
- I. Internet Service: Provide temporary internet service in Construction Manager's field office.
- J. Provide Contractor's superintendent with cellular telephone for use during business hours.

### 3.4 SUPPORT FACILITIES INSTALLATION

- A. General: 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. Maintain support facilities until Substantial Completion.
- B. Temporary Roads and Paved Areas: Site Work Contractor to construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.



1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Planned Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
  2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
  3. Recondition base after temporary use, including removing contaminated material, regrading, proof rolling, compacting, and testing.
  4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Site Work Contractor to provide temporary parking areas for all construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
  2. Remove snow and ice as required to minimize accumulations in all areas of construction operation.
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."
1. Waste from Construction Operations: Includes materials not intended or necessary for completion of Work, including packing materials, food waste, wastepaper, and similar items. Excavated material is not included in this definition.
  2. Chutes: Provide enclosed chutes for removal of waste from construction operations from levels above grade level or roof. Remove waste in a controlled manner; materials shall not be dropped or thrown from heights.



3. Each prime contractor shall remove their own debris from the work area to a waste disposal container on a daily basis.
  4. Maintenance of a clean, safe work site shall be the responsibility of each prime contractor.
  5. Dumpsters are to be provided by all prime contractors for the performance of their work.
  6. All waste to be disposed of legally.
- H. Recycling Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
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. Packaging:
    - a. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
    - b. Polystyrene Packaging: Separate and bag materials.
    - c. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site.
  3. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.
- I. Shoring and Bracing: Provide and maintain shoring, bracing, and structural supports, designed by a qualified professional engineer, required to preserve stability and prevent movement, settlement, or collapse of new and existing construction and to prevent unexpected or uncontrolled movement or collapse of construction.
- J. Staging and Scaffolding: Provide facilities necessary for supporting materials and personnel in accordance with requirements of authorities having jurisdiction
- K. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
- L. Temporary Elevator Use: Use of elevators is not permitted.
- M. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- N. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.



1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- O. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

### 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: 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: 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.
- C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
  1. Maintain protection zones free of weeds and trash.
  2. Do not prune roots or branches of trees to remain without approval of Architect.
    - a. If pruning is approved, engage an experienced, qualified arborist to perform pruning and treating.
  3. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.
- E. Site Enclosure Fence: Before construction operations begin, Site Work Contractor to furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
  1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner and one set to the Construction Manager.



- F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Fall Protection:
  - 1. The Roofing Contractor shall provide temporary cable top and mid railings per OSHA regulations.
  - 2. All prime contractors shall provide OSHA approved fall protection for their workers as required.
- I. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
  - 1. Where temporary egress doors occur, provide minimum clear opening width of 36 inches.
- J. Temporary Enclosures: 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. Face exterior enclosures with plywood, unless otherwise approved, in advance, by Architect. Polyethylene sheet may not be used for exterior enclosures.
  - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- K. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
  - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  - 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
  - 3. Insulate partitions to control noise transmission to occupied areas.
  - 4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  - 5. Paint surfaces exposed to view in areas occupied by Owner.
  - 6. Protect air-handling equipment.
  - 7. Provide walk-off mats at each entrance through temporary partition.
- L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
  - 1. Prohibit smoking.
  - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.



3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

### 3.6 MOISTURE AND MOLD CONTROL

- A. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect 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.
- B. Partially Enclosed Construction Period: 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, protect 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 and replace stored or installed material that begins to grow mold.
  7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- C. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
  1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  2. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

### 3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: 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, HVAC, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
    - a. Heating: Provide heating between September 15 and May 31.
      - 1) Maintain minimum interior temperature of 60 deg F.



- 2) Maintain relative humidity levels between 50 and 55 percent.
  2. Where temperature and humidity levels required for the proper installation and application of a product or system differ from those listed above, provide supplemental temporary services to maintain the required temperature and humidity levels.
  3. Use temporary duct systems, industrial fans, or other equipment to circulate tempered air to all areas of work.
  4. Maintain operation of temporary lighting in corridors, stairwells and similar locations on a 24-hour basis.
- 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 01 50 00



## **SECTION 01 60 00 - PRODUCT REQUIREMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.

#### **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. Comparable Product: Product that is demonstrated and approved through submittal process 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 specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products.

#### **1.4 ACTION SUBMITTALS**

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.



2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor through Construction Manager of approval or rejection of proposed comparable product request.

- a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."

- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

## 1.5 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. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

- B. The use of asbestos containing building materials is prohibited.

1. Contractor is responsible for providing closeout documentation certifying no asbestos containing building materials have been used in the Work.

## 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 review 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. Protect 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.

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 warranty furnished by individual manufacturer for a particular product and specifically 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. Warranty periods related to Boilers and Accessory Equipment, and Air Conditioning Equipment do not begin until one year after the date of substantial completion.
  3. See individual Specification Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "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.

B. Product Selection Procedures:

1. Products:
  - a. 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. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
2. Manufacturers:
  - a. 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. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
3. 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, or a product by an unnamed manufacturer that complies with requirements. Drawings and Specifications 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.

C. Visual Matching Specification: Where Specifications require "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 Division 01 Section "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 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 these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  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.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00



## **SECTION 01 73 00 - EXECUTION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Examination of conditions.
  - 2. Preparation for construction.
  - 3. Construction layout.
  - 4. Field engineering and surveying.
  - 5. Installation of the Work.
  - 6. Cutting and patching.
  - 7. Progress cleaning.
  - 8. Starting and adjusting.
  - 9. Protection of installed construction.
  - 10. Correction of the Work.

#### **1.3 DEFINITIONS**

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For land surveyor and professional engineer.
- B. Structural Layout Plan: Survey of Structural Grid in relation to existing building(s).

#### **1.5 CLOSEOUT SUBMITTALS**

- A. Certificates: Submit certificate signed by land surveyor or professional engineer as applicable certifying that location and elevation of improvements comply with requirements.
- B. Certified Surveys: Submit two copies signed by land surveyor.



## 1.6 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. 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.
- C. 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, 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.
  - 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.
  - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of 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. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.



## 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, 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. 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 local utility 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. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. 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 caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "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. If discrepancies are discovered, notify Architect and Construction Manager promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 3. Inform installers of lines and levels to which they must comply.
  - 4. Check the location, level and plumb, of every major element as the Work progresses.
  - 5. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
  - 1. Structural Layout Plan: Perform Survey of Structural Grid as provided in Contract Documents, including any specific Layout Notes and/or Plan. Provide Structural Layout Plan for review by Engineer prior to performing any additional work.
- E. 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 Construction Manager.

### 3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.



1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
  2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

### 3.5 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 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated.
- 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 the best possible results. 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.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.



- G. 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.
  - 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.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.6 CUTTING AND PATCHING

- A. Cutting and Patching, 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: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- 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 prevent 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.



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. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
  2. 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. Provide additional coats until patch blends with adjacent surfaces.
  3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  4. 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.



### 3.7 PROGRESS CLEANING

- A. General: 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 in Finished Areas: 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 Division 01 Section "Temporary Facilities and Controls."
- 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 assure 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 Division 01 Section “General Commissioning Requirements.”
- 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.

### 3.9 PROTECTION 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. 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. Architect may issue “Construction Deficiency Report” for items identified by Architect as needing correction. Promptly repair or remove and replace defective construction identified in Construction Deficiency Report. Provide written notification to Architect when identified item has been corrected.
- 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 01 73 00



## **SECTION 01 77 00 - CLOSEOUT PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.
  - 5. Repair of the Work.
- B. All Submittals identified in Section 01 77 00 are classified as “Informational Submittals” in accordance with Specification Section 01 33 00.

#### **1.3 SUBSTANTIAL COMPLETION PROCEDURES**

- A. Submittals Prior to Substantial Completion: Complete the following before Contract-scheduled date of Substantial Completion:
  - 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, electrical inspection reports, preliminary balance reports, and similar releases.
  - 2. Submit notarized letter on Contractor’s letterhead certifying no asbestos containing building materials have been used in the Work. Also include a copy in the Operation and Maintenance Manuals.
  - 3. Submit testing, adjusting, and balancing records. Also include a copy in the Operation and Maintenance Manuals.
  - 4. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- B. **Procedures Prior to Substantial Completion:** Complete the following before Contract-scheduled date of Substantial Completion:
  - 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. Maintenance to be performed by a factory authorized service representative so as not to void the equipment warranty.
  5. Advise Owner of changeover in heat and other utilities.
  6. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  7. Complete all items on any Field Observation and Construction Deficiency Reports and submit a copy of the reports to the Architect and Construction Manager identifying how each item was addressed in detail, including the date of completion.
  8. Complete final cleaning requirements as specified below, including touchup painting.
  9. Repair and restore marred exposed finishes to eliminate visual defects.
  10. Complete all items noted as requiring completion/correction from the Commissioning consultant and TAB (Testing and Balancing) consultant.
- C. Inspection: No later than 14 days prior to the Contract-scheduled date of Substantial Completion, submit a letter to the Architect and Construction Manager confirming the work is on schedule for Substantial Completion by the contract specified date. No later than seven days after Contract-scheduled date of Substantial Completion (including authorized adjustments), the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. Absent the Contractor letter confirming readiness of work, the Architect may elect to postpone the Substantial Completion inspection.
1. Additional Inspections: Request additional Substantial Completion inspections when the work that was not complete for the scheduled Substantial Completion inspection is now ready to inspect.
    - a. Costs for such additional Substantial Completion inspections will be deducted from sums otherwise due the Contractor by deduct Change Order.
  2. Results of completed inspection will form the basis of requirements for final completion.

#### 1.4 FUNCTIONAL COMPLETION PROCEDURES

- A. Functional Completion applies to Contract Work being Commissioned. The commissioning of Divisions 01, 22, 23, and 26 (as applicable to each Contractor) must be complete prior to Functional Completion, except for the following:
1. Deferred Work approved in writing by the Architect.
  2. Control system training planned to be performed after occupancy and final acceptance.



3. Any required seasonal TAB work to be formed during Warranty period.
  4. Other approved deferred testing.
- B. Completion of Commissioning required to demonstrate Functional Completion includes the following as applicable for all systems, but is not limited to:
1. Completed and signed pre-functional checklists and start-up documentation.
  2. Requested trend logs complete, data and forms submitted and approved.
  3. Completion of all functional testing.
  4. Required training of Owner personnel completed and approved.
  5. Submission of final approved TAB report.
  6. Submission of final approved commissioning report.
  7. Submission of the approved O&M manuals.
  8. All identified deficiencies have been corrected or are approved in writing by the Owner to be excepted from this milestone.
- C. The Architect will determine the date of Functional Completion after reviewing the Commissioning Agent's recommendation for Functional Completion.

## 1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before final inspection for determining final completion, complete the following:
1. Submit copy of Architect's Substantial Completion inspection list of items to be completed or corrected. The copy of the list shall state that each item has been completed or otherwise resolved for acceptance, what corrective action was taken, and the date of completion. Items that are in dispute shall have an explanation attached.
  2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
  3. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, property surveys, and similar final record information.
  4. Submit closeout submittals specified in individual Specification Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  5. Submit maintenance material submittals specified in individual Specification Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Contractor to provide a transmittal detailing all delivered maintenance materials and obtain Owner signature confirming delivery of such; a copy of transmittal with Owner's signature shall be provided with Closeout submittals. Label with manufacturer's name and model number where applicable. All keys shall be tagged and labeled.



6. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  7. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
- B. Inspection: No later than seven days after the Contract-scheduled date for final completion, Architect and Construction Manager will proceed with the final completion inspection. The Architect will review the final Certificate for Payment after the inspection or will notify the Contractor of the outstanding items that must be completed or corrected before the certificate will be processed.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete has been completed or corrected. The Owner and Architect and Construction Manager reserve the right to add items to the Substantial Completion and final completion inspection lists as long as it is part of the Contractor's work. Complete all Contract requirements prior to the final completion inspection to avoid any further re-inspection cost.
    - a. Costs for such re-inspections and any costs for extension of the Architect's and Construction Manager's services will be deducted from sums otherwise due the Contractor.

#### 1.6 SUBMITTAL OF PROJECT WARRANTIES

- A. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual. Warranties for all equipment, materials, and systems on the Project are to start no sooner than the date of substantial completion. Provide extended warranties for all equipment, materials, and systems that may have been turned over to the Owner for its use regardless of the phased completion of the Project.
- B. 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 two digital media copies, PDF on thumb drive.
- C. 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.



4. Submit two paper copies, as listed above.
- D. 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. 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. Complete the following cleaning operations before inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. 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.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Remove surface dust and dirt from all vertical and horizontal painted surfaces. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.



- g. Sweep concrete floors broom clean in unoccupied spaces using sweeping compound that is compatible with new finishes.
  - h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
  - i. 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.
  - j. Remove labels that are not permanent.
  - k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
  - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
  - p. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before 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 condition acceptable to Owner.
  - 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 fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00



## **SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Manual Format: Submit operation and maintenance manuals in the following format:
  - 1. Two paper copies as listed below.
  - 2. Two digital media copies, PDF format on thumb drive.
- B. Prior to submission of paper copies and thumb drives as listed above, submit electronic files in PDF format for review and approval.

#### **1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS**

- A. 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.
    - 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. 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. 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.
  4. 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.
- B. 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.

## 1.5 REQUIREMENTS FOR OPERATION AND MAINTENANCE MANUALS

- A. Organization: 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: Include the following information:
    - a. Subject matter included in manual.
    - b. Name and address of Project.
    - c. Date of submittal.
    - d. Name and contact information for Contractor.
  2. 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.
    - a. 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.
  3. 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.



## 1.6 OPERATION AND MAINTENANCE MANUALS

- A. Operation 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.
    - a. Product name and model number. Use designations for products indicated on Contract Documents.
    - b. Manufacturer's name.
    - c. Equipment identification with serial number of each component.
    - d. Equipment function.
    - e. Complete nomenclature and number of replacement parts.
  2. Operating Procedures: Include the following, as applicable:
    - a. Startup procedures.
    - b. Routine and normal operating instructions.
    - c. Regulation and control procedures.
    - d. Normal shutdown instructions.
    - e. Seasonal and weekend operating instructions.
    - f. Special operating instructions and procedures.
  3. Emergency Procedures: Include the following, as applicable:
    - a. Instructions on stopping.
    - b. Shutdown instructions for each type of emergency.
    - c. Operating instructions for conditions outside normal operating limits.
    - d. Special operating instructions and procedures.
  4. Wiring diagrams.
  5. Control diagrams.
  6. Piped system diagrams.
    - a. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.
  7. Precautions against improper use.
  8. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- B. Maintenance Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, manufacturers' maintenance documentation, maintenance and service schedules, spare parts list and source information, maintenance service contracts, repair materials and sources, and warranties and bonds, as described below.



1. 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.
2. Product Information: Include the following, as applicable:
  - a. Product name and model number.
  - b. Manufacturer's name.
  - c. Color, pattern, and texture.
  - d. Material and chemical composition.
  - e. Reordering information for specially manufactured products.
3. Maintenance Procedures: Include manufacturer's written recommendations and 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. Schedule for routine cleaning and maintenance.
  - e. Repair instructions.
4. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - a. Standard maintenance instructions and bulletins.
  - b. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - c. Identification and nomenclature of parts and components.
  - d. List of items recommended to be stocked as spare parts.
5. 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.
  - a. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  - b. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
6. 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.
7. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
8. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.



9. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - a. Include procedures to follow and required notifications for warranty claims.

## 1.7 MANUAL PREPARATION

- A. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, 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.
  1. 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.
- C. 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 operation and maintenance manuals.
- D. Submittals: Include copy of each product submittal approved by Architect.
  1. If the "As-Specified Verification Form" was used as the product submittal, include all pertinent product data as described in this Section.
- E. Safety Data Sheets (SDS): Include copy of SDS for each product installed.
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23



## **SECTION 01 78 39 - PROJECT RECORD DOCUMENTS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Miscellaneous record submittals.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Record Drawings: Contractor to submit a full set of marked-up record drawings pertaining to their contract. Provide each drawing, whether or not changes and additional information were recorded. Comply with the following:
  - 1. Submit one full size set of the original, marked-up record prints.
  - 2. Submit two digital media copies, in color, in PDF format on thumb drives. PDFs to be saved and submitted as one file.
  - 3. Prior to submission of paper copies and thumb drives as listed above, submit electronic files in PDF format for review and approval.
- B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities.
  - 1. Submit two paper copies of each submittal.

#### **1.4 RECORD DRAWINGS**

- A. Record Prints: Architect will provide Contractor with one paper set of Contract Drawings at beginning of Work at no cost.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally.
    - 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.



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. Revisions to routing of piping and conduits.
- d. Revisions to electrical circuitry.
- e. Locations of concealed internal utilities.
- f. Changes made by Addendum.
- g. Changes made by Architect's Supplemental Instruction (ASI) forms.
- h. Changes made by Change Order or Construction Change Directive.
- i. Changes made following Architect's written orders.

3. Mark record sets with red, permanent marker.

B. Record Digital Data Files: Prepare a full set of digital data files of the Contract Drawings from the marked-up record prints.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Indicate name of Contractor.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. 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.

## 1.5 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.

## 1.6 RECORDING AND MAINTENANCE

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. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's, Construction Manager's and Owner's reference during normal working hours.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 39



## **SECTION 01 79 00 - DEMONSTRATION AND TRAINING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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. Instruction in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.

#### **1.3 CLOSEOUT SUBMITTALS**

- A. Attendance Record: For each demonstration and training session, submit list of participants, subjects covered, and length of instruction time.
- B. Demonstration and Training Video Recordings: Submit two copies of each demonstration and training session.
  - 1. Identification: On each copy, provide an applied label with the following information:
    - a. Name of Project.
    - b. Name of Architect.
    - c. Name of Construction Manager.
    - d. Name of Contractor.
    - e. Name of service representative providing training.
    - f. Name of instructor.
    - g. Date of video recording.

#### **1.4 QUALITY ASSURANCE**

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

#### **1.5 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.



## 1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training for each system and for equipment not part of a system, as required by individual Specification Sections. 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. Operating standards.
  2. Documentation: Review the following items in detail:
    - a. Manuals.
    - b. Warranties and bonds.
  3. Operations: Include the following, as applicable:
    - a. Startup procedures.
    - b. Routine and normal operating instructions.
    - c. Regulation and control procedures.
    - d. Safety procedures.
    - e. Normal shutdown instructions.
    - f. Operating procedures for emergencies.
    - g. Seasonal and weekend operating instructions.
    - h. Special operating instructions and procedures.
  4. Adjustments: Include the following:
    - a. Noise and vibration adjustments.
    - b. Economy and efficiency adjustments.
  5. Troubleshooting: Include the following:
    - a. Diagnostic instructions.
    - b. Test and inspection procedures.
  6. Maintenance: Include the following:
    - a. Types of cleaning agents to be used and methods of cleaning.
    - b. Procedures for routine cleaning
    - c. Procedures for preventive maintenance.
    - d. Procedures for routine maintenance.
  7. Repairs: Include the following:
    - a. Diagnosis instructions.
    - b. Repair instructions.



## 1.7 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- 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, through Construction Manager, with at least seven days' advance notice.

## 1.8 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode.
  - 1. Submit video recordings on a flash drive.
- B. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 79 00



## **SECTION 02 41 19 - SELECTIVE DEMOLITION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General 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.

#### **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.

#### **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 and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress.



3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

## 1.6 SUBMITTALS, GENERAL

- A. General: Submit all informational submittals required by this Section concurrently.

## 1.7 INFORMATIONAL SUBMITTALS

- A. Predemolition Photographs or Video: Show existing conditions, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit photos or video recordings on thumb drive before Work begins. Include copy of key plan indicating each photograph's or video's location and direction.
  1. Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modification.
  2. Photographs: Provide high-resolution color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels.
    - a. Name each image with date photograph was taken, location, and unique sequential number keyed to accompanying key plan in file name.
  3. Video: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels.
    - a. Name each video recording with date video recording was recorded, location, and unique sequential number keyed to accompanying key plan in file name.
    - b. Begin narration of each video recording with Contractor's name, videographer's name, and location in Project.
      - 1) Describe scenes on video recording by audio narration.
      - 2) Confirm date and time at beginning and end of recording.

## 1.8 CLOSEOUT SUBMITTALS

- A. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

## 1.9 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.



- 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-protection facilities in service during selective demolition operations.

#### 1.10 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and restore 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. Verify any existing warranties with owner prior to start of work.
- 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.

#### 1.11 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 ANSI/ASSP A10.6 and NFPA 241.



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- C. Engage a professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
  - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- D. Record existing conditions by use of preconstruction photographs or video.
  - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by demolition operations.
  - 2. Inventory and record the condition of items to be removed and reinstalled. Provide photographs or video of conditions that might be misconstrued as damage caused by demolition operations.
- E. Beginning selective demolition constitutes Contractor's acceptance of conditions.

### 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. Arrange to shut off utilities with utility companies.
  - 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 fire-suppression systems, 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 Division 01 Section "Temporary Facilities and Controls."
- 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 adequate ventilation when using cutting torches.
  6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  9. Dispose of demolished items and materials promptly.
- 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 designated by Owner.
  5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
1. Clean and restore items to functional condition adequate for intended reuse.



2. Pack or crate items after cleaning and restoring. 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 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
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.
- B. Burning: Do not burn demolished materials.

### 3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19



**SECTION 03 30 53 - MISCELLANEOUS CAST-IN-PLACE CONCRETE****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section includes cast-in-place concrete, including reinforcement, concrete materials, mixture design, accessories, placement procedures, and finishes.

**1.3 SUBMITTALS****A. Action Submittals:**

1. Product Data: For each type of product indicated.
  - a. Fibrous reinforcement.
  - b. Slab control joint sealer.
  - c. Penetrating silane sealer.
  - d. Grout.
  - e. Chemical anchor adhesives.
  - f. Curing compound.
  - g. Corrective mortar (industry name is Repair mortar).
  - h. Thin coat patching mortar.
  - i. Corrective overlayment (industry name is Repair Overlayment).
2. Design Mixtures: For each concrete mixture.
  - a. Indicate amounts of mixing water to be withheld for later addition at Project site.
  - b. Include compressive strength test reports.
  - c. Include all ingredient certifications and product data concurrently.
3. 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.

**B. Informational Submittals:**

1. Material Certificates: For each type of the following, signed by manufacturers:
  - a. Reinforcing bars.
  - b. Epoxy-coated reinforcing bars.
  - c. Welded wire fabric.



- d. Joint dowel bars.
  - e. Cementitious materials.
- 2. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
  - a. Aggregates.
- 3. Proposed curing method for all concrete elements.

#### 1.4 QUALITY ASSURANCE

- A. Ready-Mix-Concrete 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.
- B. Comply with the following sections of ACI 301, unless modified by requirements in the Contract Documents:
  - 1. "General Requirements."
  - 2. "Formwork and Formwork Accessories."
  - 3. "Reinforcement and Reinforcement Supports."
  - 4. "Concrete Mixtures."
  - 5. "Handling, Placing, and Constructing."
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

### PART 2 - PRODUCTS

#### 2.1 FORMWORK

- A. Furnish formwork and formwork accessories according to ACI 301.

#### 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Epoxy-Coated Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed bars, ASTM A 775/A 775M or ASTM A 934/A 934M, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.
- C. Plain-Steel Welded Wire Fabric: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.



## 2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. Epoxy Corrective Coating (Industry name is Epoxy Repair Coating): Liquid, two-part, epoxy corrective coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775/A 775M.
- C. 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 exterior concrete, use galvanized wire or dielectric-polymer-coated wire bar supports.
  - 2. 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.
  - 3. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

## 2.4 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 or Type II.
    - a. Fly Ash: ASTM C 618, Class C or F.
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates:
  - 1. ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.
  - 2. ASTM C 33, Class 4S coarse aggregate or better, graded, for exterior concrete. Provide aggregates from a single source.
  - 3. Maximum Coarse-Aggregate Size:
    - a. Slabs on Grade: 1-1/2 inches nominal.
    - b. All other concrete: 1 inch nominal.
  - 4. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.



- D. Synthetic Macro-Fiber: Polyolefin macro-fibers (containing no reprocessed olefin materials) engineered and designed for use as secondary reinforcing in concrete, complying with ASTM C 1116/C 1116M, Type III, 1 1/4 to 2-1/4 inches long, varying fiber thickness, and no water absorption.

## 2.5 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. Mid-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type A or Type F. Water content reduction to be greater than 7%.
  - 5. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 6. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 7. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

## 2.6 RELATED MATERIALS

- A. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- B. Bond breakers: Waterborne, VOC compliant form release agent.
- C. Penetrating, Silane Sealer: Single component, minimum 40% silane, waterbased slab sealer that forms chemical bond to the concrete. VOC compliant.
  - 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; Enviroseal 40.
    - b. Chem Masters; Aquanil Plus 40.
    - c. Dayton Superior Corporation; Weather Worker 40% J29WB.
- D. Grout: ASTM C 1107, factory-packaged, shrinkage-resistant, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
- E. Chemical Anchor Adhesives: Heavy duty, two component injectable adhesive designed to be dispensed using double chamber gun with mixing nozzle. Adhesives in capsule form will not be accepted.



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. DeWalt; AC200+.
  - b. Hilti, Inc.; HIT-HY 200R; HIT-HY 200A; HIT-ICE.
  - c. ITW Redhead; A7+.

## 2.7 CURING MATERIALS

- A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.
- C. Water: Potable.
- D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1-D, Class B, dissipating, with fugitive dye.

## 2.8 RECONSTRUCTION AND CORRECTIVE MATERIALS

- A. Corrective Mortar (Industry name is Repair Mortar): Site-mixed Portland-cement mix for vertical and overhead surfaces. Mix dry-pack corrective mortar, consisting of one part shrinkage-compensating, Portland cement to two and one-half parts fine aggregate passing a No. 16 sieve by damp, loose volume, using only enough water for handling and placing.
- B. Thin Coat Patching Mortar: Polymer modified, Portland cement, suitable for interior and exterior applications. Featheredge up to 3/16 inch. For thicker applications manufacturer's recommendations to extend mix with an aggregate may apply.
- C. Corrective Overlayment (Industry name is Repair Overlayment): Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations. For thicker applications manufacturer's recommendations to extend mix with an aggregate may apply.
  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 or coarse sand as recommended by topping manufacturer.
  4. Compressive Strength: Not less than 5,000 psi at 28 days when tested according to ASTM C 109/C 109M.

## 2.9 CONCRETE MIXTURES

- A. Comply with ACI 301 requirements for concrete mixtures.



- B. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing, high-range water-reducing or plasticizing admixture in all concrete. Design mix for optimum placement and workability.
  2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  3. Use a mid-range, water-reducing admixture in pumped concrete, all concrete slabs (including concrete walks), concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
- C. Exterior Concrete: For concrete elements at the exterior of the building, including but not limited to slabs (concrete walks), curbs and architectural concrete elements, proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4,500 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.45.
  3. Slump Limit: 4 inches, plus or minus 1 inch; or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
  4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size. Applies to all slabs on grade.
  5. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size. Applies to all exterior concrete other than slabs on grade.
- D. All Other Concrete: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4,000 psi at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.50.
  3. Slump Limit: 4 inches, plus or minus 1 inch; or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
  4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size.

## 2.10 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.



- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
  - 1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
  - 2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
  - 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that subgrade conditions are satisfactory prior to forming or pouring concrete. Owner's Testing Agency shall inspect slab and footing subgrade prior to placing concrete.
- B. Verify that reinforcing is properly in place prior to pouring concrete.
- C. Verify that formwork is complete and properly secured prior to placing concrete.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.
- E. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 FORMWORK

- A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

### 3.3 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.4 STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- 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.



### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Locate and install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Control Joints in Slabs-on-Grade: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness, as follows:
  - 1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. Space joints as shown on Drawings or, if not shown, at 12 feet average spacing and not exceeding 15 feet. Locate joints to align with existing joints where possible.
- D. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
  - 1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

### 3.6 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, (4.3.2.1 Slump Adjustment.)
  - 1. With each concrete mixture submittal, indicate amounts of mixing water to be withheld for later addition at Project site.
  - 2. Water added must not increase the water-cement ratio past the approved mix design ratio.
  - 3. Add additional water reducer or plasticizer to mix instead of adding water to achieve flowable, workable concrete. Do not add water to concrete after adding these admixtures to mixture.
  - 4. Do not add water after truck is more than half empty.
- C. Consolidate concrete with mechanical vibrating equipment.
- D. Equipment Bases and Foundations:
  - 1. Coordinate sizes and locations of concrete bases with actual equipment provided.
  - 2. Construct concrete bases 4 inches high unless otherwise indicated; and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated or unless required for seismic anchor support.



3. Minimum Compressive Strength: 4,000 psi at 28 days.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base, and anchor into structural concrete substrate.
6. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
7. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.

### 3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas corrected and patched. Remove fins and other projections exceeding 1/2 inch.
  1. Apply to concrete surfaces not exposed to public view.
  2. 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.
- B. 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 UNFORMED SURFACES

- A. General: Comply with ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on surface.
  1. Do not further disturb surfaces before starting finishing operations.
- C. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set methods. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.
- D. Nonslip Broom Finish: Apply a nonslip broom finish to surfaces indicated and to exterior concrete walks, slabs, platforms, steps, and ramps. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.



- E. Exterior Concrete Walks and Slabs: Apply penetrating, silane sealer per manufacturer's instructions.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.
- B. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- C. Curing Methods: Cure formed and unformed concrete for at least seven days 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 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, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately correct any holes or tears during curing period using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and correct damage during curing period.

### 3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Contractor to supply all batch tickets to Owner's testing agency. Batch tickets to note w/c ratio and amount of water allowed to be added at Project site.
- C. Inspections
  - 1. Deep Foundations (such as pole bases, etc): verify placement locations and plumbness, confirm diameters, lengths, embedment into bedrock, and adequate end bearing capacity.



- D. Tests: Perform according to ACI 301. Include Unit Weight: ASTM C 138, fresh unit weight of concrete. Two tests per truck load; one at beginning of pour and near end of pour.
1. Testing Frequency: One composite sample shall be obtained for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.
  2. Include corresponding concrete mix batch tickets with each test report.
  3. Indicate amount of water added to batch at Project site.

### 3.11 CORRECTIVE WORK

- A. Remove and replace concrete that does not comply with requirements in this Section.

END OF SECTION 03 30 53



## **SECTION 07 84 13 - PENETRATION FIRESTOPPING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Penetrations in fire-resistance-rated walls.

#### **1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals required by this Section concurrently.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Penetrations in fire-resistance-rated walls.
- B. Sustainable Design Submittals:
  - 1. Product Data: For sealants, indicating VOC content.
- C. Product Schedule: For each penetration firestopping system. Include type of penetration, illustration of firestopping system, and design designation of qualified testing and inspecting agency.

#### **1.5 CLOSEOUT SUBMITTALS**

- A. Installer Certificates: From Installer indicating that penetration firestopping systems have been installed in compliance with requirements and manufacturer's written instructions.

#### **1.6 QUALITY ASSURANCE**

- A. Installer Qualifications: A firm that has been approved by FM Approvals according to FM Approvals 4991, "Approval Standard for Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."



## 1.7 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.

## 1.8 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.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

- A. Obtain joint firestop systems for each type of joint opening indicated from single manufacturer.

### 2.2 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 firestop systems installed with products bearing the classification marking of a qualified product certification agency in accordance with listed system designs published by a qualified testing agency.
      - 1) UL in its online directory "Product iQ."

### 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 are to be compatible with one another, with the substrates forming openings, and with penetrating items if any.



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. 3M Fire Protection Products.
  - b. Hilti, Inc.
  - c. RectorSeal, a CSW Industrials company.
- B. Penetrations in Fire-Resistance-Rated Walls: Penetration firestopping systems with ratings determined per ASTM E814 or UL 1479.
  1. F-Rating: Not less than the fire-resistance rating of the wall penetrated.
  2. Membrane Penetrations: Install recessed fixtures such that the required fire resistance will not be reduced.
- C. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E84.
  1. Verify sealant has a VOC content of 250 g/L or less.
- D. 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 strips for use around combustible penetrants.



- 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. Pillows/Bags: Compressible, removable, and reusable intumescent pillows encased in fire-retardant polyester or glass-fiber cloth. Where exposed, cover openings with steel-reinforcing wire mesh to protect pillows/bags from being easily removed.
- I. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- J. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants.
- K. Fire-Rated Cable Sleeve Kits: Complete kits designed for new or existing cable penetrations through walls to accept standard accessories.
- L. Thermal Wrap: Flexible protective wrap tested and listed for up to 2-hour fire ratings in accordance with ASTM E814/UL 1479 for membrane penetrations or ASTM E1725/UL 1724 for thermal barrier and circuit integrity protection.
- M. Fire-Rated Cable Pathways: Single or gangable device modules composed of a steel raceway with integral intumescent material and requiring no additional action in the form of plugs, twisting closure, putty, pillows, sealant, or otherwise to achieve fire and air-leakage ratings.
- N. Retrofit Device for Cable Bundles: Factory-made, intumescent, collar-like device for firestopping existing over-filled cable sleeves and capable of being installed around projecting sleeves and cable bundles.
- O. Wall-Opening Protective Materials: Intumescent, non-curing putty pads or self-adhesive inserts for protection of electrical switch and receptacle boxes.
- P. Firestop Plugs: Flexible, re-enterable, intumescent, foam-rubber plug for use in blank round openings and cable sleeves.
- Q. Fire-Rated Cable Grommet: Molded two-piece grommet made of plenum-grade polymer and foam inner core for sealing small cable penetrations in gypsum walls up to 1/2 inch diameter.

## 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.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 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.
- B. 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 OF PENETRATION FIRESTOPPING SYSTEMS

- 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. Special Inspections: Special Inspections are required for the work of this Section. Refer to Division 01 Section "Quality Requirements" and its attachments.
  1. Owner will engage a qualified testing agency to perform tests and inspections according to ASTM E2174.
- B. Where deficiencies are found or penetration firestopping system is damaged or removed because of testing, repair or replace penetration firestopping system to comply with requirements.
- C. Proceed with enclosing penetration firestopping systems 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 system 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 systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping material and install new materials to produce systems complying with specified requirements.

### 3.7 PENETRATION FIRESTOPPING SYSTEM SCHEDULE

- A. Where UL-classified systems are indicated, they refer to UL system numbers in its online directory "Product iQ" under product Category XHEZ.
- B. For each location where a penetration occurs, provide a firestopping system selected from the wall system below that complies with this Section and is suitable for the penetration conditions indicated for the Project.



WALL Firestopping Systems Listed Using the Alpha-Alpha-Numeric Identification System Published in UL's <i>Fire Resistance Directory</i> , Vols. 2a - 2b				
TYPE OF PENETRANT	Wall PENETRATION SYSTEMS (First Alpha Component = C or W)			
	Concrete or Masonry Walls with a Mini- mum Thickness Less Than or Equal to 8 Inches (203 MM)	Concrete or Masonry Walls with a Mini- mum Thickness OF MORE Than 8 Inch- es (203 MM)	Framed Walls	Composite panel walls
NO PENETRATING ITEMS	C-AJ-0001-0999, C-BJ-0001-0999, or W-J-0001-0999		W-L-000-1-0999	
METALLIC PIPE, CONDUIT, OR TUBING	C-AJ-1001-1999, C-BJ-1001-1999, or W-J-1001-1999	C-BK-1001-1999 or W-K-1001-1999	W-L-1001-1999	W-N-1001-1999
NONMETALLIC PIPE, CONDUIT, OR TUBING	C-AJ-2001-2999, C-BJ-2001-2999, or W-J-2001-2999	C-BK-2001-2999 or W-K-2001-2999	W-L-2001-2999	W-N-2001-2999
ELECTRICAL CABLES	C-AJ-3001-3999, C-BJ-3001-3999, or W-J-3001-3999	C-BK-3001-3999 or WK-3001-3999	W-L-3001-3999	
CABLE TRAYS WITH ELECTRICAL CABLES	C-AJ-4001-4999, C-BJ-4001-4999, or W-J-4001-4999	W-K-4001-4999	W-L-4001-4999	



WALL Firestopping Systems Listed Using the Alpha-Alpha-Numeric Identification System Published in UL's <i>Fire Resistance Directory</i> , Vols. 2a - 2b				
TYPE OF PENETRANT	Wall PENETRATION SYSTEMS (First Alpha Component = C or W)			
	Concrete or Masonry Walls with a Mini- mum Thickness Less Than or Equal to 8 Inches (203 MM)	Concrete or Masonry Walls with a Mini- mum Thickness OF MORE Than 8 Inch- es (203 MM)	Framed Walls	Composite panel walls
INSULATED PIPES	C-AJ-5001-5999, C-BJ-5001-5999, or W-J-5001-5999	C-BK-5001-5999	W-L-5001-5999	W-N-5001-5999
MISCELLANEOUS ELECTRICAL PENETRANTS	C-AJ-6001-6999, C-BJ-6001-6999, or W-BJ-6001-6999		W-L-6001-6999	
MISCELLANEOUS MECHANICAL PENETRANTS	C-AJ-7001-7999, C-BJ-7001-7999, or W-J-7001-7999		W-L-7001-7999	W-N-7001-7999
GROUPINGS OF PENETRATIONS	C-AJ-8001-8999, C-BJ-8001-8999, or W-J-8001-8999		W-L-8001-8999	

END OF SECTION 07 84 13



## **SECTION 07 92 00 - JOINT SEALANTS**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Silicone joint sealants.

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
  - 1. Cylindrical sealant backings.
  - 2. Bond-breaker tape.
  - 3. Primers.
- B. As-Specified Data: If the product to be incorporated into Project is as specified by manufacturer name and product designation in Part 2 of this Specification Section, submit the “**As-Specified Verification Form**” (attached to Division 01 Section “Submittal Procedures”) for each item listed below, otherwise submit full Product Data for the following:
  - 1. Silicone joint sealants.
- C. Sustainable Design Submittals:
  - 1. Product Data: For sealants, indicating VOC content.
- D. Samples: Manufacturer's color charts showing the full range of colors available for each product exposed to view.
- E. 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.



## 1.5 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.

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content: Sealants and sealant primers shall comply with the following:
1. Architectural sealants shall have a VOC content of 250 g/L or less.
  2. Sealants and sealant primers for nonporous surfaces shall have a VOC content of 250 g/L or less.
  3. Sealants and sealant primers for porous substrates shall have a VOC content of 775 g/L or less.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range. Multiple colors may be selected.

### 2.2 SILICONE JOINT SEALANTS

- A. Silicone Joint Sealants: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.
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 Chemical Company (The); DOWSIL790 Silicone Building Sealant.
    - b. GE/Momentive Performance Materials Inc.; SCS2700 SilPruf LM.
    - c. Pecora Corporation; 890NST.
    - d. Tremco Incorporated; Spectrem 1.



2. Joint-Sealant Application: Joints in vertical surfaces.

a. Joint Locations:

- 1) Penetrations in exterior walls and interior wall penetrations not requiring penetration firestopping.

2.3 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 C1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or either 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.

2.4 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: Nonstaining, 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 performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.



### 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.
  - 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.
- 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 Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.



- E. 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.
- F. 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 C1193 unless otherwise indicated.

### 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 joint sealants and of products in which joints occur.

### 3.5 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 correct damaged or deteriorated joint sealants immediately so installations with corrected areas are indistinguishable from original work.

END OF SECTION 07 92 00



## **SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section includes the following:
  - 1. Definitions, references, and abbreviations.
  - 2. General regulatory requirements.
  - 3. General requirements regarding site/field conditions including existing conditions and field measurements.
  - 4. Sequencing and scheduling including coordination.
  - 5. Definition of design equipment and procedures for consideration of specified equivalents, proposed equivalents, or substitutions.
  - 6. Transition fittings.
  - 7. Plumbing demolition.
  - 8. Equipment installation requirements common to equipment sections.
  - 9. Supports and anchorages.

#### **1.3 DEFINITIONS**

- A. Existing Piping to Remain: Existing piping that is not to be removed and that is not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
- B. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe chases, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- C. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- D. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- E. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in chases.
- F. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.



#### 1.4 SYSTEM DESCRIPTION

- A. Provide complete systems, properly connected, tested, balanced, adjusted, and ready for operation, including all necessary and required controls, safeties, details and accessories, including (but not limited to):
  - 1. Site water and sanitary sewer utilities.
  - 2. Water distribution systems.
  - 3. Domestic water wells.
  - 4. Electrical control wiring to equipment furnished in this Contract.
  - 5. Electrical power wiring to equipment furnished in this Contract.
  - 6. Miscellaneous items.

#### 1.5 COORDINATION PROCEDURES

- A. Coordinate construction operations and construction schedule of plumbing work in accordance with Section 01 31 00 “Project Management and Coordination” and as modified below.
  - 1. Pre-Installation Conference:
    - a. Attend pre-installation conference. Arrange for all subcontractors to be in attendance.
  - 2. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for plumbing installations.
  - 3. Coordinate Plumbing Work with HVAC systems, lighting fixtures, ceiling mounted devices, ceiling heights, materials, structural work, maintenance clearances, and electric code clearance and building systems.
  - 4. Notify Owner's Project Representative and Architect in case of unresolved interferences prior to installation of Plumbing Work.
  - 5. Adjust exact size, location and offsets of pipes to achieve reasonable appearance objectives in open areas without ceilings without increase in Contract Sum.

#### 1.6 SUBMITTALS, GENERAL

- A. Comply with requirements of SECTION 01 33 00 “Submittal Procedures” for each individual Section and as modified below.
- B. Submit all action submittals required by individual Section concurrently.
  - 1. As-Specified Products: If product to be incorporated into Project is as specified by name and product designation in Part 2 of product specification, and will be installed as specified in Part 3, and only where allowed as such in submittal portion of product specification, then submit “**As-Specified Verification Form**” (attached to SECTION 01 33 00 “Submittal Procedures”) in lieu of “Product Data” identified in the Action Submittal.



2. Do not use “**As Specified Verification Form**” unless specifically indicated in detailed product specification.
3. Equivalent Products or Substitutions: If product to be incorporated into Project is not specified by name and product designation in Part 2 below, comply with all Product Data requirements specified.

#### 1.7 INFORMATIONAL SUBMITTALS

- A. Contract Closeout Submittals: Comply with requirements of Section 01 77 00 “Closeout Procedures”.

#### 1.8 QUALITY ASSURANCE.

- A. Provide installation, testing and materials in accordance with Federal, State and Local Building, Health, Plumbing and Electrical Codes, Laws, Ordinances, and Regulations that apply to Plumbing Work.
  1. Comply with applicable requirements of following documents:
    - a. New York State Uniform Fire Prevention and Building Code.
    - b. 2020 Building Code of New York State.
    - c. 2020 Fire Code of New York State.
    - d. 2020 Plumbing Code of New York State.
    - e. 2020 Mechanical Code of New York State.
    - f. 2020 Fuel Gas Code of New York State.
    - g. 2020 Energy Conservation Construction Code of New York State.
    - h. New York State Education Department Manual of Planning Standards.
    - i. In event of a conflict between the Codes identified above and Contract Documents, comply with more stringent requirement.
  2. Obtain and pay for necessary inspections, certificates, and permits from applicable agencies. Perform required tests in accordance with regulation of agency having jurisdiction. Submit certificates of approval prior to the date of Substantial Completion as defined in Section 01 77 00 “Closeout Procedures”.
- B. Electrical Characteristics for Plumbing Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is submitted to the Architect and approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.



- B. Packing and Shipping: Ship materials in manufacturer's containers, fully identified with manufacture's name, trade name, type, class, style, model, grade, size and color.
- C. Storage and Protection:
  - 1. Store materials, equipment, fixtures, pipe, fittings, and attachments, under cover, off ground in original containers as applicable, and protect from physical and weather damage while in storage and during construction.
  - 2. Furnish extra materials identified in technical sections, in original manufacturers' containers and packaging, to Owner at location identified during prebid conference. Obtain receipt from Owner upon delivery of extra materials and send copy of receipt to Architect.
  - 3. Replace or repair damaged, rusted, corroded or otherwise unusable materials physically damaged or weather damaged equipment as determined by Architect, at no change in Contract Sum.
  - 4. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

#### 1.10 PROJECT/SITE CONDITIONS

- A. Existing Conditions:
  - 1. Reuse equipment only as indicated on Drawings.
  - 2. All usable material and equipment not being reused is to be offered to the Owner. If accepted by Owner the Contractor shall deliver to a location on District grounds designated by the Owner.
  - 3. All other material and equipment to be removed, shall be removed from the site and legally disposed of by the Contractor.
- B. Rodent Proofing:
  - 1. Openings for Pipes: In or on structures where openings have been made in walls, floors or ceilings for the passage of pipes, such openings shall be closed and protected by the installation of approved metal collars that are securely fastened to the adjoining structure. Refer to Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing piping" for additional requirements.
- C. Protection of Plumbing Systems:
  - 1. Corrosion: Provide corrosion protection for pipes passing through concrete or cinder walls and floors or buried in corrosive soil conditions.
    - a. Provide oversized sleeves or core drilled holes to eliminate rubbing on above grade piping installations. Refer to Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing Piping" for pipe sleeve and core drilling requirements.
    - b. Refer to individual Division 22 piping Sections for corrosion protection on buried piping installations in corrosive soil conditions.



2. Stress and Strain: Install plumbing systems in a manner that prevents stresses and strains that exceed the structural strength of the pipe. Install piping systems to accommodate expansion, contraction and structural settlement.
3. Freezing: Do not install water, soil, waste or storm piping outside of a building, in attics or crawlspaces, conceal in outside walls or in any other place subjected to freezing temperatures without providing measures to keep the contents of the piping system from freezing.

D. Field Measurements:

1. Layout of equipment, piping, and similar components in Drawings is diagrammatic. Review Drawings to identify interference with other construction and verify dimensions at Site prior to beginning installation.
  - a. Obtain exact location of all items and openings and confirm all existing conditions in field.
  - b. Obtain exact location and roughing requirements for all equipment furnished by others, but installed by this Contractor before roughing. Owner reserves right to make reasonable changes prior to "roughing-in" without increase in Contract Sum.
2. Report any conflicts to Architect in writing before beginning installation.
3. Provide fittings, horizontal and vertical offsets, elevation changes, etc. required to install Plumbing Work. Do not infer that Drawings show level of detail indicating every offset, elbow, union, fitting, elevation changes, or other aspect required for complete installation.
4. Install Plumbing Work with proper provisions for removal and/or access to valves, traps, cleanouts, etc.

## 1.11 SEQUENCING AND SCHEDULING

- A. Perform Plumbing Work in cooperation with Owner, Architect, Construction Manager, and all Contractors on this Project, and other separate Contractors at the Site.
  1. Coordinate Plumbing Work with construction schedule requirements in Division 01
  2. Coordinate all submittals with the construction schedule and with requirements and schedules contained in Section 01 33 00 "Submittals Procedures."
  3. Immediately report any delays in receipt of materials required for Plumbing Work including circumstances causing delays.
- B. Refer to Division 01 for cooperation between Contractors. Prior to start of construction:
  1. Obtain from Contract Drawings or Architect, exact location of items and openings in construction. Conform to existing conditions in field.
  2. Review applicable Shop Drawings of all Contracts.
  3. If conflict occurs between Contract Drawings, advise Architect in writing before beginning installation and comply with Architect's directions.



4. Obtain exact location and roughing requirements for equipment furnished by other Contractor or by Owner, but installed by Contractor responsible for Plumbing Work before beginning roughing.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Minimum Material Requirements:

1. Construct potable water systems and equipment according to AWWA standards.
2. Provide electrical equipment and systems meeting UL standards and requirements of NEC.
3. Provide UL label on all equipment and material with listing service.
4. Material Flammability:
  - a. Flame spread rating of 25 or less.
  - b. Smoke developed rating of 50 or less.
5. Equipment Verification: Carefully check manufacturer's drawings and specifications as they affect their equipment; follow factory instructions for roughing, installation, connection, filling, lubrication, testing, balancing, adjusting, alignment, wiring, and start-up operation.

### 2.2 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.
- B. Insulating Material: Suitable for system fluid, pressure, and temperature.
- C. Dielectric Unions:
  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. Capitol Manufacturing Company.
    - b. Central Plastics Company.
    - c. Hart Industries International, Inc.
    - d. Jomar International Ltd.
    - e. Matco-Norca, Inc.
    - f. McDonald, A. Y. Mfg. Co.
    - g. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
    - h. Wilkins; a Zurn company.



2. Description:
  - a. Standard: ASSE 1079.
  - b. Pressure Rating: 125 psig minimum at 180 deg F.
  - c. End Connections: Solder-joint copper alloy and threaded ferrous.

## 2.3 TRANSITION FITTINGS

### A. General Requirements:

1. Same size as pipes to be joined.
2. Pressure rating at least equal to pipes to be joined.
3. End connections compatible with pipes to be joined.

### B. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.

### C. Sleeve-Type Transition Coupling: AWWA C219.

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. Cascade Waterworks Manufacturing.
  - b. Dresser, Inc.; Piping Specialties Products.
  - c. Ford Meter Box Company, Inc. (The).
  - d. JCM Industries.
  - e. Romac Industries, Inc.
  - f. Smith-Blair, Inc.; a Sensus company.
  - g. Viking Johnson.
2. Description: Metal, bolted, sleeve-type, reducing or transition coupling, with center sleeve, gaskets, end rings, and bolt fasteners, and with ends of same sizes as piping to be joined.
3. Standard: AWWA C219.
4. Center-Sleeve Material: Manufacturer's standard.
5. Gasket Material: Natural or synthetic rubber.
6. Pressure Rating: 150 psig minimum.
7. Metal Component Finish: Corrosion-resistant coating or material.

### D. Plastic-to-Metal Transition Fittings:

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. Charlotte Pipe and Foundry Company.



- b. Harvel Plastics, Inc.
    - c. Spears Manufacturing Company.
  - 2. Description:
    - a. CPVC one-piece fitting with manufacturer's Schedule 80 equivalent dimensions.
    - b. One end with threaded brass insert and one solvent-cement-socket or threaded end.
- E. Plastic-to-Metal Transition Unions:
- 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. Colonial Engineering, Inc.
    - b. NIBCO Inc.
    - c. Spears Manufacturing Company.
  - 2. Description:
    - a. CPVC four-part union.
    - b. Brass or stainless-steel threaded end.
    - c. Solvent-cement-joint or threaded plastic end.
    - d. Rubber O-ring.
    - e. Union nut.

## PART 3 - EXECUTION

### 3.1 PLUMBING DEMOLITION

- A. Refer to Section 02 41 19 "Selective Structure Demolition" for general demolition requirements and procedures.
- B. Disconnect, demolish, and remove plumbing systems, equipment, and components indicated to be removed.
  - 1. Remove Piping: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - 2. Abandon Piping in Place: Drain piping and cap or plug piping with same or compatible piping material.
  - 3. Remove Equipment: Disconnect and cap services and remove equipment.
  - 4. Remove and Reinstall Equipment: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - 5. Remove and Salvage Equipment: Disconnect and cap services and remove equipment and deliver to Owner.
- C. If pipe, insulation, or equipment to remain is damaged in appearance or is rendered unserviceable during the process of demolition, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.



### 3.2 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- A. Unless specific mounting heights are indicated, install equipment to allow maximum possible headroom.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- C. Install plumbing equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

### 3.3 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Refer to Division 05 Sections, Section 22 05 29 “Hangers and Supports for Plumbing Piping and Equipment”, for detailed additional requirements.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor plumbing materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

### 3.4 DIELECTRIC FITTINGS

- A. Install dielectric fittings according to the specific requirements in the Division 22 Sections specifying piping systems.

### 3.5 TRANSITION FITTINGS

- A. Install transition fittings according to the specific requirements in the Division 22 Sections specifying piping systems.

END OF SECTION 22 05 00



## **SECTION 22 05 17 - SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

**A. Section Includes:**

1. Sleeve-seal systems.

#### **1.2 ACTION SUBMITTALS**

**A. Product Data:** For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sleeves seals.

1. Sleeve-seal systems.

### **PART 2 - PRODUCTS**

#### **2.1 SLEEVE-SEAL SYSTEMS**

**A. Manufacturers:** Subject to compliance with requirements, provide products by one of the following:

1. Advance Products & Systems, LLC.
2. CALPICO, Inc.
3. GPT; an EnPro Industries company.
4. Metraflex Company (The).
5. Proco Products, Inc.

**B. Description:** Modular sealing-element unit, designed for field assembly, for filling annular space between piping and sleeve.

1. Designed to form a hydrostatic seal of 20 psig minimum.
2. Sealing Elements: EPDM-rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
3. Pressure Plates: Stainless steel, Type 316.
4. Connecting Bolts and Nuts: Stainless steel, Type 316 of length required to secure pressure plates to sealing elements.



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION OF SLEEVES - GENERAL

- A. Sleeves are not required for core-drilled holes.

### 3.3 INSTALLATION OF SLEEVE-SEAL SYSTEMS

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at service piping entries into building and passing through exterior walls.
- B. Select type, size, and number of sealing elements required for piping material and size and for sleeve ID or hole size. Assemble sleeve-seal system components and install in annular space between piping and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make a watertight seal.

### 3.4 SLEEVE SCHEDULE

- A. Use sleeves and sleeve seals for the following piping-penetration applications:
  - 1. Existing Exterior Concrete Walls above and below Grade:
    - a. Sleeve-seal system.

END OF SECTION 22 05 17



## **SECTION 22 05 19 - METERS AND GAUGES FOR PLUMBING PIPING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Test plugs and kits.
  - 2. Sight flow indicators.

#### **1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals required by this Section concurrently.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sleeves and sleeve seals. Include rated capacities, and furnished specialties and accessories.
  - 1. Test plugs.
  - 2. Test plug kits.
  - 3. Sight flow indicators.
- B. As-Specified Data: If the product to be incorporated in the Work is as specified by manufacturer name and product designation in this Specification Section, submit the “**As-Specified Verification Form**” (attached to Section 01 33 00 “Submittal Procedures”) for each item listed below; otherwise submit full Product Data for the following:
  - 1. Snubbers.
  - 2. Valves.

#### **1.5 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For each type of gauge to include in operation and maintenance manuals.



## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Domestic water for plumbing piping intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act, with requirements of authorities having jurisdiction, and with NSF 61 and NSF 372, or be certified in compliance with NSF 61 and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.
- B. Compatibility: Provide products suitable for piping service fluids, materials, working pressures, and temperatures.

### 2.2 TEST PLUGS, LEAD FREE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Trerice, H. O. Co.
  - 2. WATTS; A Watts Water Technologies Company.
  - 3. Weiss Instruments, Inc.
- B. Source Limitations: Provide lead-free test plugs from single manufacturer.
- C. Description: Test-station fitting made for insertion into piping tee fitting.
- D. Body: Lead-free brass or stainless steel with core inserts and gasketed and threaded cap. Include extended stem on units to be installed in insulated piping.
- E. Thread Size: NPS 1/4 or NPS 1/2, ASME B1.20.1 pipe thread.
- F. Minimum Pressure and Temperature Rating: 500 psig at 200 deg F.
- G. Core Inserts: EPDM self-sealing rubber.

### 2.3 TEST-PLUG KITS, LEAD FREE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Trerice, H. O. Co.
  - 2. WATTS; A Watts Water Technologies Company.
  - 3. Weiss Instruments, Inc.
- B. Source Limitations: Provide lead-free test-plug kits from single manufacturer.
- C. Furnish one test-plug kit(s) containing one thermometer(s), one pressure gauge and adapter, and carrying case. Thermometer sensing elements, pressure gauge, and adapter probes are to be of diameter to fit test plugs and of length to project into piping.



- D. High-Range Thermometer, Lead Free: Small, bimetallic insertion type with 1- to 2-inch-diameter dial and tapered-end sensing element. Dial range is to be at least 0 to 220 deg F.
- E. Pressure Gauge, Lead Free: Small, lead-free Bourdon-tube insertion type with 2- to 3-inch-diameter dial and probe. Dial range is to be at least 0 to 200 psig.
- F. Carrying Case: Metal or plastic, with formed instrument padding.

## 2.4 SIGHT FLOW INDICATORS, LEAD FREE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. ARCHON Industries, Inc.
  - 2. Dwyer Instruments, Inc.
  - 3. Ernst Flow Industries.
  - 4. John C. Ernst Co., Inc.
  - 5. KOBOLD Instruments, Inc. - USA.
  - 6. OPW Engineered Systems; OPW Fluid Transfer Group; a Dover company.
- B. Source Limitations: Provide lead-free sight flow indicators from single manufacturer.
- C. Description: Piping inline-installation device for visual verification of flow.
- D. Construction: Lead-free bronze or stainless-steel body, with sight glass and indicator, and threaded or flanged ends.
- E. Minimum Pressure Rating: 125 psig.
- F. Minimum Temperature Rating: 200 deg F.
- G. End Connections: NPS 2 and smaller, threaded.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION OF METERS AND GAUGES

- A. Install valve and snubber in piping for each pressure gauge for fluids.
- B. Install test plugs in piping tees.

END OF SECTION 22 05 19



## **SECTION 22 05 23 - GENERAL-DUTY VALVES FOR PLUMBING PIPING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Ball valves.
  - 2. Check valves.

#### **1.3 DEFINITIONS**

- A. CWP: Cold working pressure.
- B. EPDM: Ethylene propylene copolymer rubber.
- C. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.
- D. NRS: Nonrising stem.
- E. OS&Y: Outside screw and yoke.
- F. RPTFE: Reinforced polytetrafluoroethylene.
- G. RS: Rising stem.
- H. SWP: Steam working pressure.
- I. WOG: Water, oil, gas.

#### **1.4 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals required by this Section concurrently.

#### **1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of valve indicated.
  - 1. Ball valves.
  - 2. Check valves.

#### **1.6 QUALITY ASSURANCE**

- A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.



B. ASME Compliance:

1. ASME B1.20.1 for threads for threaded end valves.
2. ASME B16.1 for flanges on iron valves.
3. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
4. ASME B16.18 for solder-joint connections.
5. ASME B31.9 for building services piping valves.

C. NSF Compliance:

1. NSF/ANSI-61- Drinking Water System Components - Health Effects.
2. NSF/ANSI-61-8 Commercial Hot 180°F (includes Annex F and G).
3. NSF/ANSI-372 for lead-free valve materials for potable-water service.

D. Bronze valves shall be made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.

## 1.7 DELIVERY, STORAGE, AND HANDLING

A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.
2. Protect threads, flange faces, grooves, and weld ends.
3. Set ball valves open to minimize exposure of functional surfaces.
4. Block check valves in either closed or open position.

B. Use the following precautions during storage:

1. Maintain valve end protection.
2. Store valves indoors and maintain at higher than ambient dew point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

A. Obtain each type of valve from single source from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

A. Standards:

1. Domestic water valves intended to convey or dispense water for human consumption must comply with the SDWA, requirements of authorities having jurisdiction, and NSF 61 and NSF 372, or must be certified to be in compliance with NSF 61 and NSF 372 (by an ANSI-accredited third-party certification body) that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.



B. ASME Compliance:

1. ASME B1.20.1 for threads for threaded end valves.
2. ASME B16.1 for flanges on iron valves.
3. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
4. ASME B16.18 for cast copper solder-joint connections.
5. ASME B16.22 for wrought copper and copper alloy solder-joint connections.
6. ASME B16.34 for flanged and threaded end connections.
7. ASME B16.51 for press joint.
8. ASME B31.9 for building services piping valves.

C. AWWA Compliance: Comply with AWWA C606 for grooved-end connections.

D. Provide bronze valves made with dezincification-resistant materials. Bronze valves made with copper alloy (brass) containing more than 15 percent zinc are not permitted.

E. Valve Pressure-Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.

F. Valve Sizes: Same as upstream piping unless otherwise indicated.

G. Valve Actuator Type:

1. Hand Lever: For quarter-turn valves NPS 4 and smaller.

H. Valves in Insulated Piping:

1. Ball Valves: Provide 2-inch extended neck stems.
2. Extended operating handles with nonthermal-conductive covering material and protective sleeves that allow operation of valves without breaking vapor seals or disturbing insulation.
3. Memory stops that are fully adjustable after insulation is applied.

I. Refer to valve schedule articles for applications of valves.

J. Valve Bypass and Drain Connections: MSS SP-45.

## 2.3 BRONZE BALL VALVES

A. Bronze Ball Valves, Lead-Free, Two-Piece with Full Port, and Stainless-Steel Trim, Solder or Threaded Ends (NPS 2 and smaller):

1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO INC.; Model S/T-585-66-LF-NS or a comparable product by one of the following:
  - a. Conbraco Industries, Inc.; Apollo Valves; 70LF-140, 70LF-240.
  - b. Hammond Valve.
  - c. Milwaukee Valve Company.
  - d. Watts Regulator Co.; a division of Watts Water Technologies, Inc; LFB6000-SS, LFB6001-SS.



2. Description:

- a. Standard: MSS SP-110.
- b. SWP Rating: 150 psig.
- c. CWP Rating: 600 psig.
- d. Body Design: Two piece.
- e. Body Material: Bronze.
- f. Ends: Soldered or threaded.
- g. Seats: PTFE or TFE.
- h. Stem: Type 316 stainless steel.
- i. Ball: Type 316 stainless steel, vented.
- j. Port: Full.
- k. Handle: Insulated extension handle.

B. Bronze Ball Valves, Lead-Free, Two-Piece with Full Port, and Stainless-Steel Trim, Press Ends (NPS 2 and smaller):

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO INC.; Model PC-585-80-LF-NS or a comparable product by one of the following:
  - a. Apollo Flow Controls; Conbraco Industries, Inc.
  - b. Hammond Valve.
  - c. Milwaukee Valve Company.
  - d. Watts Regulator Co.; a division of Watts Water Technologies, Inc.

2. Description:

- a. Standard: MSS SP-110 or MSS-145.
- b. CWP Rating: Minimum 200 psig.
- c. Body Design: Two piece.
- d. Body Material: Bronze.
- e. Ends: Press.
- f. Press Ends Connections Rating: Minimum 200 psig.
- g. Seats: Reinforced PTFE.
- h. Stem: Bronze or brass.
- i. Ball: Stainless steel.
- j. Port: Full.
- k. O-Ring Seal: EPDM.
- l. Handle: Insulated extension handle.

## 2.4 SILICON BRONZE SWING CHECK VALVES

A. Bronze Swing Check Valves with Nonmetallic Disc, Class 125:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO INC.; T/S/PC-413-Y-LF or comparable product by one of the following:
  - a. Hammond Valve.
  - b. Milwaukee Valve Company.
  - c. WATTS.



2. Description:

- a. Standard: MSS SP-139.
- b. CWP Rating: 200 psig (1380 kPa).
- c. Body Design: Horizontal or vertical (flow in upward direction) flow.
- d. Body Material: Silicon bronze (ASTM listed), corrosion resistant.
- e. Ends: Threaded, soldered, or press. See valve schedule articles.
- f. Disc: PTFE.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for form and cleanliness.
- D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- E. Do not attempt to repair defective valves; replace with new valves.
- F. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION OF VALVES

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install check valves for proper direction of flow and as follows:
  - 1. Swing Check Valves: In horizontal position with hinge pin level.
- F. Valve Tags: Comply with requirements in Section 22 05 53 "Identification for Plumbing Piping and Equipment" for valve tags and schedules.



### 3.3 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

### 3.4 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valve applications are not indicated, use the following:
  - 1. Shutoff Service: Ball valves.
  - 2. Throttling Service: Ball valves.
- B. If valves with specified SWP classes or CWP ratings are not available, the same types of valves with higher SWP classes or CWP ratings may be substituted.
- C. Select valves, except wafer types, with the following end connections:
  - 1. For Copper Tubing, NPS 2 and Smaller: Threaded ends except where solder-joint valve-end option or press-end option is indicated in valve schedules below.

### 3.5 DOMESTIC, HOT- AND COLD-WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller:
  - 1. Bronze Valves: May be provided with solder-joint ends instead of threaded ends.
  - 2. Bronze Ball Valves: Two-piece with full port and stainless-steel trim. Provide with threaded, solder or press connection-joint ends.
  - 3. Bronze Swing Check Valves: Class 125, nonmetallic disc.

END OF SECTION 22 05 23



## **SECTION 22 05 29 - 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 Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Metal pipe hangers and supports.
  - 2. Thermal hanger-shield inserts.
  - 3. Fastener systems.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for sleeves and sleeve seals. Include rated capacities, and furnished specialties and accessories.
  - 1. Insulation shields.
- B. As-Specified Data: If the product to be incorporated in the Work is as specified by manufacturer name and product designation in this Specification Section, submit the “**As-Specified Verification Form**” (attached to Section 01 33 00 “Submittal Procedures”) for each item listed below; otherwise submit full Product Data for the following:
  - 1. Threaded rod.
  - 2. Adjustable clevis hanger.
  - 3. Adjustable swing-ring band hangers.
  - 4. Adjustable swivel-ring band hangers.
  - 5. Hinged pipe clamps.
  - 6. Riser clamps.
  - 7. Beam Clamps.

### 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 stands, 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 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. Anvil International; a subsidiary of Mueller Water Products Inc.
2. Cooper B-Line, Inc.
3. ERICO International Corporation.
4. PHD Manufacturing, Inc.

## 2.3 METAL PIPE HANGERS AND SUPPORTS

- A. Carbon-Steel Pipe Hangers and Supports:

1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
2. Galvanized Metallic Coatings: Pregalvanized, hot-dip galvanized, or electro-galvanized.
3. Nonmetallic Coatings: Plastic coated or epoxy powder coated.
4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.

## 2.4 THERMAL HANGER-SHIELD INSERTS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Buckaroos, Inc.
2. CADDY; brand of nVent Electrical plc.
3. Carpenter & Paterson, Inc.
4. Pipe Shields Inc.

- B. Insulation-Insert Material for Type "B" and "E" Insulated Piping Support Assemblies: ASTM C552, Type II cellular glass with 100-psig or ASTM C591, Type VI, Grade 1 polyisocyanurate with 125-psig minimum compressive strength and vapor barrier.

- C. Insulation-Insert Material for Type "C" and "F" Insulated Piping Support Assemblies: Water-repellent-treated, ASTM C533, Type I calcium silicate with 100-psig minimum compressive strength.

- D. For Trapeze or Clamped Systems: Insert and shield shall cover entire circumference of pipe.

- E. For Clevis or Band Hangers: Insert and shield shall cover lower 180 degrees of pipe.



- F. Insert Length: Extend 2 inches beyond sheet metal shield for piping operating below ambient air temperature.

## 2.5 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hilti, Inc.
    - b. ITW Ramset/Red Head; Illinois Tool Works, Inc.
    - c. MKT Fastening, LLC.
    - d. Simpson Strong-Tie Co., Inc.
- B. Mechanical-Expansion Anchors: Insert-wedge-type anchors, for use in hardened portland cement concrete, with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Cooper B-line; brand of Eaton, Electrical Sector.
    - b. Empire Tool and Manufacturing Co., Inc.
    - c. Hilti, Inc.
    - d. ITW Ramset/Red Head; Illinois Tool Works, Inc.
    - e. MKT Fastening, LLC.
  - 2. Indoor Applications: Zinc-coated or stainless steel.
  - 3. Outdoor Applications: Stainless steel.

## 2.6 PIPE-POSITIONING SYSTEMS

- A. Description: IAPMO PS 42 positioning system composed of metal brackets, clips, and straps for positioning piping in pipe spaces; for plumbing fixtures in commercial applications.

## 2.7 MATERIALS

- A. Carbon Steel: ASTM A1011/A1011M.
- B. Structural Steel: ASTM A36/A36M carbon-steel plates, shapes, and bars; black and galvanized.
- C. Stainless Steel: ASTM A240/A240M.



- D. Grout: ASTM C1107/C1107M, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
  - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
  - 2. Design Mix: 5000-psi, 28-day compressive strength.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Strength 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 plus 200 lb.

### 3.2 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-58. Install hangers, supports, clamps, and attachments as required to properly support piping from building structure.
- B. Thermal Hanger-Shield Installation: Install in pipe hanger or shield for insulated piping.
- C. Fastener System Installation:
  - 1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches thick in concrete, after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
  - 2. Install mechanical-expansion anchors in concrete, after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- D. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.
- E. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.
- F. Install lateral bracing with pipe hangers and supports to prevent swaying.
- G. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- H. Load Distribution: Install hangers and supports, so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.



I. Insulated Piping:

1. Use thermal hanger-shield insert with clamp sized to match OD of insert.
2. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
3. Install MSS SP-58, Type 39 protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
  - a. Option: Thermal hanger-shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
4. Install MSS SP-58, Type 40 protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
  - a. Option: Thermal hanger-shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 and larger if pipe is installed on rollers.
5. Shield Dimensions for Pipe: Not less than the following:
  - a. NPS 1/4 to NPS 3-1/2: 12 inches long and 0.048 inch thick.
6. Thermal Hanger Shields: Install with insulation of same thickness as piping insulation.

3.3 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches.

3.4 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-58 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finishes.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports and attachments for general service applications.
- F. Use thermal hanger-shield inserts for insulated piping and tubing.



- G. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Piping in general service applications:
    - a. Insulated Piping Systems:
      - 1) NPS 2 and Smaller: Electro-galvanized clevis hanger with galvanized steel thermal-hanger shield insert for suspension of insulated stationary pipes. Hanger sized on outside insulation diameter.
- H. Vertical-Piping Clamps: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Extension Pipe or Riser Clamps (MSS Type 8): For support of pipe risers NPS 3/4 to NPS 24.
  2. Carbon- or Alloy-Steel Riser Clamps (MSS Type 42): For support of pipe risers NPS 3/4 to NPS 24 if longer ends are required for riser clamps.
- I. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches for heavy loads.
  2. Steel Clevises (MSS Type 14): For 120 to 450 deg F piping installations.
- J. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
  2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
  3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
  4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
  5. C-Clamps (MSS Type 23): For structural shapes.
  6. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.
  7. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
- K. Saddles and Shields: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel-Pipe-Covering Protection Saddles (MSS Type 39): To fill interior voids with insulation that matches adjoining insulation.
  2. Protection Shields (MSS Type 40): Of length recommended in writing by manufacturer to prevent crushing insulation.
  3. Thermal-Hanger Shield Inserts: For supporting insulated pipe.
- L. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 22 05 29



## **SECTION 22 05 53 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Equipment and piping labels.
  - 2. Valve tags and signage.
  - 3. Warning tape.

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals and informational submittals required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Warning signs/labels.
  - 2. Valve function signage.
- B. As-Specified Data: If the product to be incorporated in the Work is as specified by manufacturer name and product designation in this Specification Section, submit the “**As-Specified Verification Form**” (attached to Section 01 33 00 “Submittal Procedures”) for each item listed below; otherwise submit full Product Data for the following:
  - 1. Equipment labels.
  - 2. Pipe labels.
  - 3. Warning tape.
- C. Samples: For color, letter style, and graphic representation required for each identification material and device.
- D. Equipment-Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.
- E. Valve-numbering scheme.
- F. Valve Schedules: For each piping system. Include in operation and maintenance manuals.



## 1.5 COORDINATION

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

## PART 2 - PRODUCTS

### 2.1 EQUIPMENT LABELS

- 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. Brady, Inc.
  - 2. Craftmark Pipe Markers.
  - 3. Seton, Inc.
- B. Plastic Labels for Equipment:
  - 1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, with predrilled holes for attachment hardware.
  - 2. Letter and Background Color: As indicated for specific application under Part 3.
  - 3. Maximum Temperature: Able to withstand temperatures of up to 160 deg F.
  - 4. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
  - 5. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances of up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
  - 6. Fasteners: Stainless steel rivets or self-tapping screws.
  - 7. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- C. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.

### 2.2 PIPE LABELS

- 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. Brady, Inc.



2. Craftmark Pipe Markers.
  3. Seton, Inc.
- B. General Requirements for Manufactured Pipe Labels: Preprinted, color coded, with lettering indicating service and showing flow direction in accordance with ASME A13.1.
- C. Letter and Background Color: As indicated for specific application under Part 3.
- D. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.
- E. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing and separate self-adhesive direction arrow tape on each end fully wrapped around pipe.
- F. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings. Also include:
1. Pipe size.
  2. Flow-Direction Arrows: Include flow-direction arrows on main distribution piping. Arrows may be either integral with label or applied separately.
  3. Lettering Size: At least 1/2 inch for viewing distances of up to 72 inches and proportionately larger lettering for greater viewing distances.

## 2.3 STENCILS

- 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. Craftmark Pipe Markers.
  2. Kolbi Pipe Marker Co.
  3. Marking Services Inc.
  4. Pipemarker.com; Brimar Industries, Inc.
- B. Stencils: Prepared with letter sizes according to ASME A13.1 for piping; and minimum letter height of 3/4 inch for access panel and door labels, equipment labels, and similar operational instructions.
1. Stencil Material: Aluminum, brass, or fiberboard.
  2. Stencil Paint: Exterior, gloss, acrylic enamel in colors complying with recommendations in ASME A13.1 unless otherwise indicated. Paint may be in pressurized spray-can form.
  3. Identification Paint: Exterior, acrylic enamel in colors in accordance with ASME A13.1 unless otherwise indicated. Paint may be in pressurized spray-can form.
  4. Letter and Background Color: As indicated for specific application under Part 3.

## 2.4 VALVE TAGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Brady Corporation.



2. Craftmark Pipe Markers.
  3. Kolbi Pipe Marker Co.
  4. Marking Services Inc.
  5. Pipemarket.com; Brimar Industries, Inc.
  6. Seton Identification Products; a Brady Corporation company.
- B. Description: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch numbers.
1. Tag Material: Brass, 0.04-inch minimum thickness, with predrilled or stamped holes for attachment hardware.
  2. Fasteners: Brass link chain or S-hook.
- C. Letter and Background Color: As indicated for specific application under Part 3.
- D. Valve Schedules: For each piping system, on 8-1/2-by-11-inch bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.
1. Include valve-tag schedule in operation and maintenance data.

## 2.5 VALVE FUNCTION SIGNAGE

- 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. Brady, Inc.
  2. Craftmark Pipe Markers.
  3. Seton, Inc.
- B. Plastic Signage:
1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/8 inch thick, and having predrilled holes for attachment hardware.
  2. Letter Color: White.
  3. Background Color: Black.
  4. Maximum Temperature: Able to withstand temperatures up to 160 deg F.
  5. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch.
  6. Minimum Letter Size: 1/4 inch for name of units if viewing distance is less than 24 inches, 1/2 inch for viewing distances up to 72 inches, and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.



7. Fasteners: Stainless-steel rivets or self-tapping screws.
8. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- C. Signage Content: Include valve's unique verbiage where indicated on Drawings, unless otherwise specified.
  1. Bypass valves: Text to read "Bypass Valve-Normally Closed".

## 2.6 WARNING TAPE

- 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. Presco, Inc.; Sherman, Texas
  2. EMED Co., Buffalo, New York.
  3. Seton Identification Products, A Tricor Direct Company.
- B. Detectable Warning Tape: Acid- and alkali-resistant, PE film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep
  1. Color Code:
    - a. Blue: Water & Associated Lines.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean piping and equipment surfaces of incompatible primers, paints, and encapsulants, as well as dirt, oil, grease, release agents, and other substances that could impair bond of identification devices.

### 3.2 INSTALLATION, GENERAL REQUIREMENTS

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.
- D. Locate identifying devices so that they are readily visible from the point of normal approach.

### 3.3 INSTALLATION OF EQUIPMENT LABELS, WARNING SIGNS, AND LABELS

- A. Permanently fasten labels on each item of plumbing equipment.



- B. Sign and Label Colors.
  - 1. White letters on an ANSI Z535.1 safety-green background.
- C. Locate equipment labels where accessible and visible.
- D. Provide nameplates for equipment with identifying name of equipment and function.
- E. Provide name plates for panels identifying name of panel and function, function of switches, control devices, panel lights, and buttons and securely fasten to panels.

### 3.4 INSTALLATION OF PIPE LABELS

- A. Install pipe labels showing service and flow direction with permanent adhesive on pipes.
- B. Stenciled Pipe Label Option: Stenciled labels showing service and flow direction may be provided instead of manufactured pipe labels, at Installer's option. Install stenciled pipe labels, complying with ASME A13.1, with painted, color-coded bands or rectangles on each piping system.
  - 1. Identification Paint: Use for contrasting background.
  - 2. Stencil Paint: Use for pipe marking.
- C. Pipe-Label Locations: Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
  - 1. Within 3 ft. of each valve and control device.
  - 2. At access doors, manholes, and similar access points that permit view of concealed piping.
  - 3. Within 3 ft. of equipment items and other points of origination and termination.
  - 4. Spaced at maximum intervals of 25 ft. along each run. Reduce intervals to 10 ft. in areas of congested piping and equipment.
- D. Do not apply plastic pipe labels or plastic tapes directly to bare pipes conveying fluids at temperatures of 125 deg F or higher. Where these pipes are to remain uninsulated, use a short section of insulation or use stenciled labels.
- E. Flow-Direction Flow Arrows: Use arrows, in compliance with ASME A13.1, to indicate direction of flow in pipes, including pipes where flow is allowed in both directions.
- F. Pipe-Label Color Schedule:
  - 1. Domestic Cold-Water Piping: Black letters on an ANSI Z535.1 safety-green background.



### 3.5 INSTALLATION OF VALVE TAGS

- A. Install tags on valves and control devices in piping systems, except check valves, valves within factory-fabricated equipment units, faucets, convenience and lawn-watering hose connections, and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule in the operating and maintenance manual.
- B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following subparagraphs:
  - 1. Valve-Tag Color: Natural.
  - 2. Letter Color: Black.
- C. Provide valve tag for each piping systems valve located above grade.
  - 1. Valve Directory: Provide neat typewritten directory listing valve function, location and identification number.
  - 2. Valve Numbering System: Extension of and compatible with existing valve numbering system, where valves are installed in existing building or in addition to existing building.
  - 3. Verification: Verify existing valve numbers in field and provide valve numbering avoiding duplication of existing numbers.

### 3.6 INSTALLATION OF WARNING TAPE

- A. Install warning tape 2 feet below finished grade in buried piping trenches exterior to building foundation wall for piping systems.

END OF SECTION 22 05 53



## **SECTION 22 07 19 - PLUMBING PIPING INSULATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes insulating the following plumbing piping services:
  - 1. Domestic cold-water piping.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied, if any).
  - 1. Mineral-fiber, preformed pipe insulation.
  - 2. Vapor-barrier mastic.
  - 3. Field applied jackets.

#### **1.4 QUALITY ASSURANCE**

- A. Installer Qualifications: Provide insulation system installation by qualified Installers who are trained in installation of each proposed insulation material and product with at least one of the following qualifications:
  - 1. Have successfully completed a Mechanical Insulation Apprenticeship program by the Department of Labor, Bureau of Apprenticeship and Training,
  - 2. Have successfully completed an ASHRAE / NIA 8-hour Mechanical Insulation Training course or equal, or
  - 3. Have five years documented experience as a mechanical insulation specialist with references attesting to successful completion of at least three comparable projects.
- B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
  - 1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.



## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.

## 1.6 COORDINATION

- A. Coordinate sizes and locations of supports, hangers, and insulation shields specified in Section 22 05 29 "Hangers and Supports for Plumbing Piping and Equipment."
- B. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

## 1.7 SCHEDULING

- A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.
- B. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

# PART 2 - PRODUCTS

## 2.1 INSULATION MATERIALS

- A. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- B. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
- C. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
- D. Mineral-Fiber, Preformed Pipe Insulation:
  - 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. Fibrex Insulations Inc.; Coreplus 1200.
    - b. Johns Manville; Micro-Lok.
    - c. Knauf Insulation; 1000-Degree Pipe Insulation.
    - d. Manson Insulation Inc.; Alley-K.
    - e. Owens Corning; Fiberglas Pipe Insulation.



2. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

## 2.2 INSULATING CEMENTS

- A. Mineral-Fiber, Hydraulic-Setting Insulating and Finishing Cement: Comply with ASTM C 449.
  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. Ramco Insulation, Inc.; Ramcote 1200 and Quik-Cote.

## 2.3 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.
- B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.
  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. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-127.
    - b. Eagle Bridges - Marathon Industries; 225.
    - c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 85-60/85-70.
    - d. Mon-Eco Industries, Inc.; 22-25.
  2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. PVC Jacket Adhesive: Compatible with PVC jacket.
  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; 739, Dow Silicone.
    - b. Johns Manville; Zeston Perma-Weld, CEEL-TITE Solvent Welding Adhesive.
    - c. P.I.C. Plastics, Inc.; Welding Adhesive.
    - d. Speedline Corporation; Polyco VP Adhesive.
  2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).



## 2.4 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.
  - 1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below-ambient services.
  - 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. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-30.
    - b. Eagle Bridges - Marathon Industries; 501.
    - c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 30-35.
    - d. Mon-Eco Industries, Inc.; 55-10.
  - 2. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 35-mil dry film thickness.
  - 3. Service Temperature Range: 0 to 180 deg F.
  - 4. Solids Content: ASTM D 1644, 44 percent by volume and 62 percent by weight.
  - 5. Color: White.

## 2.5 SEALANTS

- A. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
  - 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. Childers Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; CP-76.
  - 2. Materials shall be compatible with insulation materials, jackets, and substrates.
  - 3. Fire- and water-resistant, flexible, elastomeric sealant.
  - 4. Service Temperature Range: Minus 40 to plus 250 deg F.
  - 5. Color: White.
  - 6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).



## 2.6 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.
- B. PVC Jacket: High-impact-resistant, UV-resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.
  - 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. Johns Manville; Zeston.
    - b. P.I.C. Plastics, Inc.; FG Series.
    - c. Proto Corporation; LoSmoke.
    - d. Speedline Corporation; SmokeSafe.
  - 2. Adhesive: As recommended by jacket material manufacturer.
  - 3. Color: White.
  - 4. Factory-fabricated fitting covers to match jacket if available; otherwise, field fabricate.
    - a. Shapes: 45- and 90-degree, short- and long-radius elbows, tees, valves, flanges, unions, reducers, end caps, soil-pipe hubs, traps, mechanical joints, and roof drain bodies.

## 2.7 TAPES

- A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
  - 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. ABI, Ideal Tape Division; 428 AWF ASJ.
    - b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0836.
    - c. Compac Corporation; 104 and 105.
    - d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.
  - 2. Width: 3 inches.
  - 3. Thickness: 11.5 mils.
  - 4. Adhesion: 90 ounces force/inch in width.
  - 5. Elongation: 2 percent.
  - 6. Tensile Strength: 40 lbf/inch in width.
  - 7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.



- B. PVC Tape: White vapor-retarder tape matching field-applied PVC jacket with acrylic adhesive; suitable for indoor and outdoor applications.
  - 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. ABI, Ideal Tape Division; 370 White PVC tape.
    - b. Compac Corporation; 130.
    - c. Venture Tape; 1506 CW NS.
  - 2. Width: 2 inches.
  - 3. Thickness: 6 mils.
  - 4. Adhesion: 64 ounces force/inch in width.
  - 5. Elongation: 500 percent.
  - 6. Tensile Strength: 18 lbf/inch in width.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.
  - 1. Verify that systems to be insulated have been tested and are free of defects.
  - 2. Verify that surfaces to be insulated are clean and dry.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
- B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

### 3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.



- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- G. Keep insulation materials dry during application and finishing.
- H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- I. Install insulation with least number of joints practical.
- J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
  - 1. Install insulation continuously through hangers and around anchor attachments.
  - 2. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
  - 3. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
- K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.
- L. Install insulation with factory-applied jackets as follows:
  - 1. Draw jacket tight and smooth.
  - 2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive along both edges of strip.
  - 3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap.
  - 4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
  - 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.
- M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.



- O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere and seal patches similar to butt joints.

### 3.4 PENETRATIONS

- A. Insulation Installation at Underground Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.
- B. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

### 3.5 GENERAL PIPE INSULATION INSTALLATION

- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.
- B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
  - 1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
  - 2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
  - 3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
  - 4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
  - 5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.



6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
  7. Install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
  8. Stencil or label the outside insulation jacket of each union with the word "union." Match size and color of pipe labels.
- C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

### 3.6 INSTALLATION OF MINERAL-FIBER INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. Secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.



2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

### 3.7 FIELD-APPLIED JACKET INSTALLATION

- A. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints. Seal with manufacturer's recommended adhesive.
  1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

### 3.8 PIPING INSULATION SCHEDULE, GENERAL

- A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

### 3.9 INDOOR PIPING INSULATION SCHEDULE

- A. Domestic Cold Water (General Building Areas):
  1. Mineral-Fiber, Preformed Pipe Insulation with factory applied jacket, Type I:1-inch thickness.

### 3.10 INDOOR, FIELD-APPLIED JACKET SCHEDULE

- A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.
- B. Piping, Exposed:
  1. PVC: 30 mils thick.

END OF SECTION 22 07 19



**SECTION 22 11 13 - FACILITY WATER DISTRIBUTION PIPING****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes water-distribution piping and related components outside the building for water service.

**1.3 DEFINITIONS**

- A. EPDM: Ethylene propylene diene terpolymer rubber.
- B. LLDPE: Linear, low-density polyethylene plastic.
- C. PA: Polyamide (nylon) plastic.
- D. PE: Polyethylene plastic.
- E. PP: Polypropylene plastic.
- F. PVC: Polyvinyl chloride plastic.
- G. RTRF: Reinforced thermosetting resin (fiberglass) fittings.
- H. RTRP: Reinforced thermosetting resin (fiberglass) pipe.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated.
  - 1. Piping and fittings
  - 2. Identification materials
  - 3. Miscellaneous components and accessories

**1.5 INFORMATIONAL SUBMITTALS**

- A. Field quality-control test reports.

**1.6 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For water valves and specialties to include in emergency, operation, and maintenance manuals.



## 1.7 QUALITY ASSURANCE

### A. Regulatory Requirements:

1. Comply with standards of authorities having jurisdiction for potable-water-service piping, including materials, installation, testing, and disinfection.

### B. Piping materials shall bear label, stamp, or other markings of specified testing agency.

### C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

### D. Comply with ASTM F 645 for selection, design, and installation of thermoplastic water piping.

### E. NSF Compliance:

1. Comply with NSF 14 for plastic potable-water-service piping. Include marking "NSF-pw" on piping.
2. Comply with NSF 61 Annex G for materials for water-service piping and specialties for domestic water.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
- B. Protect stored piping from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor when storing inside.
- C. Protect flanges, fittings, and specialties from moisture and dirt.
- D. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

## 1.9 PROJECT CONDITIONS

- A. Interruption of Existing Water-Distribution Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water-distribution service according to requirements indicated:
  1. Notify Construction Manager and Owner no fewer than two days in advance of proposed interruption of service.
  2. Do not proceed with interruption of water-distribution service without Construction Manager's and Owner's written permission.



## PART 2 - PRODUCTS

### 2.1 PE PIPE AND FITTINGS

- A. PE, AWWA C901, ASTM Pipe: ASTM D 2239, SDR No. 7, 9, or 11; with PE compound number required to give pressure rating not less than 160 psig.
  - 1. 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:
    - a. EJ Prescott, Inc.; Drisoplex 5100 Series Ultraline
    - b. J-M Eagle Manufacturing Co.
    - c. Vari-tech LLC.
  - 2. Insert Fittings for PE Pipe: ASTM D 2609, made of PA, PP, or PVC with serrated male insert ends matching inside of pipe. Include bands or crimp rings.
  - 3. Molded PE Fittings: ASTM D 3350, PE resin, socket- or butt-fusion type, made to match PE pipe dimensions and class.

### 2.2 JOINING MATERIALS

- A. Plastic Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

### 2.3 PIPING SPECIALTIES

- A. Transition Fittings: Install transition couplings at joints of piping with small differences in OD's. Refer to transition fitting products specified in Section 33 05 00 "Common Work Results for Utilities".
- B. Dielectric Fittings: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined. Comply with requirements in Section 33 05 00 "Common Work Results for Utilities."

## PART 3 - EXECUTION

### 3.1 EARTHWORK

- A. Refer to Section 31 20 00 "Earth Moving" for excavating, trenching, and backfilling.

### 3.2 PIPING APPLICATIONS

- A. General: Use pipe, fittings, and joining methods for piping systems according to the following applications.



- B. Transition couplings and special fittings with pressure ratings at least equal to piping pressure rating may be used, unless otherwise indicated.
- C. Do not use flanges or unions for underground piping.
- D. Underground water-service piping NPS 3/4 to NPS 3 shall be the following:
  - 1. PE, ASTM pipe; molded PE fittings; and heat-fusion joints.

### 3.3 PIPING INSTALLATION

- A. Install PE pipe according to ASTM D 2774 and ASTM F 645.
- B. Bury piping with depth of cover over top at least 48 inches, with top at least 12 inches below level of maximum frost penetration, and according to the following:
  - 1. Under Driveways: With at least 48 inches cover over top.
  - 2. In Loose Gravelly Soil and Rock: With at least 12 inches additional cover.
- C. Install piping by tunneling or jacking, or combination of both, under streets and other obstructions that cannot be disturbed.
- D. Extend water-service piping and connect to water-supply source and building-water-piping systems at outside face of building wall in locations and pipe sizes indicated.
  - 1. Terminate water-service piping at building wall until building-water-piping systems are installed. Terminate piping with caps, plugs, or flanges as required for piping material. Make connections to building-water-piping systems when those systems are installed.
- E. Sleeves are specified in Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing Piping."
- F. Mechanical sleeve seals are specified in Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing Piping."
- G. See Section 22 11 16 "Domestic Water Piping" for potable-water piping inside the building.

### 3.4 JOINT CONSTRUCTION

- A. Make pipe joints according to the following:
  - 1. PE Piping Insert-Fitting Joints: Use plastic insert fittings and fasteners according to fitting manufacturer's written instructions.
  - 2. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
    - a. Dielectric Fittings for NPS 2 and Smaller: Use dielectric unions.



### 3.5 CONNECTIONS

- A. Connect water-distribution piping to interior domestic water piping.

### 3.6 FIELD QUALITY CONTROL

- A. Piping Tests: Conduct piping tests before joints are covered and after concrete thrust blocks have hardened sufficiently. Fill pipeline 24 hours before testing and apply test pressure to stabilize system. Use only potable water.
- B. Hydrostatic Tests: Test at not less than one-and-one-half times working pressure for two hours.
  - 1. Increase pressure in 50-psig increments and inspect each joint between increments. Hold at test pressure for 1 hour; decrease to 0 psig. Slowly increase again to test pressure and hold for 1 more hour. Maximum allowable leakage is 2 quarts per hour per 100 joints. Remake leaking joints with new materials and repeat test until leakage is within allowed limits.
- C. Prepare reports of testing activities.

### 3.7 IDENTIFICATION

- A. Install continuous underground detectable warning tape during backfilling of trench for underground water-distribution piping. Locate below finished grade, directly over piping. Underground warning tapes are specified in Section 22 05 53 "Identification for Plumbing Piping and Equipment."

### 3.8 CLEANING

- A. Clean and disinfect water-distribution piping as follows:
  - 1. Purge new water-distribution piping systems and parts of existing systems that have been altered, extended, or repaired before use.
  - 2. Use purging and disinfecting procedure prescribed by authorities having jurisdiction or, if method is not prescribed by authorities having jurisdiction, use procedure described in AWWA C651 or do as follows:
    - a. Fill system or part of system with water/chlorine solution containing at least 50 ppm of chlorine; isolate and allow to stand for 24 hours.
    - b. Drain system or part of system of previous solution and refill with water/chlorine solution containing at least 200 ppm of chlorine; isolate and allow to stand for 3 hours.
    - c. After standing time, flush system with clean, potable water until no chlorine remains in water coming from system.



- d. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedure if biological examination shows evidence of contamination.
- B. Prepare reports of purging and disinfecting activities.

END OF SECTION 22 11 13



## **SECTION 22 11 16 - DOMESTIC WATER PIPING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Copper tube and fittings.
  - 2. Piping joining materials.
  - 3. Transition fittings.
  - 4. Dielectric fittings.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Pipe and tube.
  - 2. Fittings.
  - 3. Joining materials.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Lab results for lead testing prior to commencing work.
- B. System purging and disinfecting activities report.
- C. Field quality-control reports.
- D. Lab results for biological testing showing samples negative for coliform bacteria.
- E. Lab results for lead testing upon completion of work.

#### **1.5 QUALITY ASSURANCE**

- A. Installer Qualifications: Installers of pressure-sealed joints are to be certified by pressure-seal joint manufacturer as having been trained and qualified to join piping with pressure-seal pipe couplings and fittings.

#### **1.6 FIELD CONDITIONS**

- A. Interruption of Existing Water Service: Refer to “Existing Utility Interruptions” paragraph of Section 01 10 00 “Project Summary-Project Schedule” for requirements associated with interrupting the existing water service to facilities occupied by the Owner.



- B. Coordinate potable water lead testing with Owner prior to starting any construction.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Domestic water piping, tubing, fittings, joints, and appurtenances intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act, with requirements of authorities having jurisdiction, and with NSF 61 and NSF 372, or be certified in compliance with NSF 61 and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

### 2.2 PIPING MATERIALS

- A. Potable-water piping and components are to comply with NSF 14, NSF 61, and NSF 372.

### 2.3 COPPER TUBE AND FITTINGS - DOMESTIC WATER

- A. Drawn-Temper Copper Tube: ASTM B88, Type L.
- B. Cast-Copper, Solder-Joint Fittings: ASME B16.18, pressure fittings. Do not use solder joints on pipe sizes greater than NPS 4.
- C. Wrought-Copper, Solder-Joint Fittings: ASME B16.22, pressure fittings. Do not use solder joints on pipe sizes greater than NPS 4.
- D. Bronze Flanges: ASME B16.24, Class 150, with solder-joint ends. Do not use solder joints on pipe sizes greater than NPS 4.
- E. Cast Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends. Do not use solder joints on pipe sizes greater than NPS 4.
- F. Wrought Copper Unions: ASME B16.22. Do not use solder joints on pipe sizes greater than NPS 4.
- G. Pressure-Seal-Joint Fittings, Copper or Bronze - Domestic Water:
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Apollo Valves; a part of Aalberts Integrated Piping Systems.
    - b. Elkhart Brass Mfg. Co., Inc.
    - c. FNW; Ferguson Enterprises, Inc.
    - d. Mueller Streamline Co.; a company of Mueller Industries.
    - e. NIBCO INC.
    - f. Viega LLC.



2. Source Limitations: Obtain pressure-seal-joint fittings, copper or bronze, from single manufacturer.
3. Housing: Copper.
4. O-Rings and Pipe Stops: EPDM.
5. Tools: Manufacturer's special tools.
6. Minimum 200 psig working-pressure rating at 250 deg F.

## 2.4 PIPING JOINING MATERIALS - DOMESTIC WATER

### A. Pipe-Flange Gasket Materials:

1. AWWA C110/A21.10, rubber, flat face, 1/8 inch thick or ASME B16.21, nonmetallic and asbestos free unless otherwise indicated.
2. Full-face or ring type unless otherwise indicated.

### B. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

### C. Solder Filler Metals: ASTM B32, lead-free alloys.

### D. Flux: ASTM B813, water flushable.

### E. Brazing Filler Metals: AWS A5.8M/A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing unless otherwise indicated.

### F. Plastic, Pipe-Flange Gaskets, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

## 2.5 TRANSITION FITTINGS - DOMESTIC WATER

- ### A.
- Install transition couplings at joints of piping with small differences in OD's. Refer to transition fitting products specified in Section 22 05 00 "Common Work Results for Plumbing".

## 2.6 DIELECTRIC FITTINGS - DOMESTIC WATER

- ### A.
- Dielectric Unions and Flanges: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined. Comply with requirements in Section 22 05 00 "Common Work Results for Plumbing."



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Before proceeding with water piping installation, examine conditions existing at Site and notify affected Contractors and Architect of any construction or any other conditions prevailing which prevent, inhibit, or otherwise interfere with water piping installation.
- B. Potable water testing for lead prior to commencing any work: A baseline for lead testing must be set. Coordinate with Owner on any potable water system lead testing previously performed in each building where modifications to the potable water systems are to take place.
  - 1. If lead testing results were performed in the last year and are available, they may be used as a baseline for lead testing.
  - 2. If lead testing results are not available, test for lead in accordance with Article 3.13 - FIELD QUALITY CONTROL below.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PIPING APPLICATIONS

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.
- B. Flanges and unions may be used for aboveground piping joints unless otherwise indicated.
- C. Aboveground domestic water piping, NPS 4 or smaller is to be one of the following:
  - 1. Drawn-temper copper tube, ASTM B88, Type L; cast- or wrought-copper, solder-joint fittings; and soldered joints.
  - 2. Drawn-temper copper tube, ASTM B88, Type L; copper pressure-seal-joint fittings; and pressure-sealed joints.

### 3.3 INSTALLATION OF PIPING

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
- B. Install copper tubing under building slab in accordance with CDA's "Copper Tube Handbook."
- C. Install valves in accordance with Section 22 05 23 "General Duty Valves for Plumbing Piping."
- D. Install domestic water piping level without pitch and plumb.
- E. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.



- F. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- G. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal and coordinate with other services occupying that space.
- H. Install piping to permit valve servicing.
- I. Install nipples, unions, special fittings, and valves with pressure ratings the same as or higher than the system pressure rating used in applications below unless otherwise indicated.
- J. Install piping free of sags and bends.
- K. Install fittings for changes in direction and branch connections.
- L. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
- M. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing Piping."
- N. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 22 05 17 "Sleeves and Sleeve Seals for Plumbing Piping."

### 3.4 PROTECTION

- A. Thermal expansion and contraction: Wrap copper and copper alloy tube passing through a wall, floor, ceiling or partition with tape or pipe insulation. Install tube through an appropriately sized sleeve to allow for thermal movement.
- B. Protect against abrasion where copper and copper alloy tube contacts building materials. Wrap tube with tape, pipe insulation, metal stud insulating pipe clamps or suitable method of isolation.
- C. Where excessive moisture is anticipated, wrap piping and support hanger with tape to prevent dissimilar metals galvanic corrosion of supporting member.

### 3.5 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- C. Threaded Joints: Thread pipe with tapered pipe threads in accordance with ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
  - 1. Apply appropriate tape or thread compound to external pipe threads.



- 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- D. Brazed Joints for Copper Tubing: Comply with CDA's "Copper Tube Handbook," "Brazed Joints" chapter.
- E. Soldered Joints for Copper Tubing: Apply ASTM B813, water-flushable flux to end of tube. Join copper tube and fittings in accordance with ASTM B828 or CDA's "Copper Tube Handbook."
- F. Pressure-Sealed Joints for Copper Tubing: Join copper tube and pressure-seal fittings with tools and procedure recommended by pressure-seal-fitting manufacturer. Leave insertion marks on pipe after assembly.
- G. Flanged Joints: Select appropriate asbestos-free, nonmetallic gasket material in size, type, and thickness suitable for domestic water service. Join flanges with gasket and bolts in accordance with ASME B31.9.
- H. Joints for Dissimilar-Material Piping: Make joints using adapters compatible with materials of both piping systems.

### 3.6 INSTALLATION OF TRANSITION FITTINGS

- A. Install transition couplings at joints of dissimilar piping.
- B. Transition Fittings in Aboveground Domestic Water Piping NPS 2 and Smaller: Plastic-to-metal transition fittings or unions.

### 3.7 INSTALLATION OF DIELECTRIC FITTINGS

- A. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.
- B. Dielectric Fittings for NPS 2 (DN 50) and Smaller: Use dielectric unions.
- C. Dielectric Fittings for NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Use dielectric flanges.

### 3.8 INSTALLATION OF HANGERS AND SUPPORTS

- A. Comply with requirements for hangers, supports, and anchor devices in Section 22 05 29 "Hangers and Supports for Plumbing Piping and Equipment."
- B. Install hangers for copper pipe, with maximum horizontal spacing and minimum rod diameters, to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.
- C. Support horizontal piping within 12 inches of each fitting.
- D. Support vertical runs of copper pipe to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.



### 3.9 PIPING CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. When installing piping adjacent to equipment and machines, allow space for service and maintenance.
- C. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.
- D. Connect domestic water piping to water-service piping with shutoff valve; extend and connect to the following:
  - 1. Equipment: Cold- and hot-water-supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection. Use flanges instead of unions for NPS 2-1/2 and larger.

### 3.10 IDENTIFICATION

- A. Identify system components. Comply with requirements for identification materials and installation in Section 22 05 53 "Identification for Plumbing Piping and Equipment."

### 3.11 CLEANING

- A. Clean and disinfect potable domestic water piping as follows:
  - 1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.
  - 2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:
    - a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
    - b. Fill and isolate system in accordance with either of the following:
      - 1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.
      - 2) Fill system or part thereof with water/chlorine solution with at least 200 ppm of chlorine. Isolate and allow to stand for three hours.
    - c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
    - d. Repeat procedures if biological examination shows contamination.
    - e. Submit water samples in sterile bottles to authorities having jurisdiction.



- B. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.
- C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

### 3.12 ADJUSTING

- A. Perform the following adjustments before operation:
  - 1. Close drain valves, hydrants, and hose bibbs.
  - 2. Open shutoff valves to fully open position.
  - 3. Open throttling valves to proper setting.
  - 4. Adjust balancing valves in hot-water-circulation return piping to provide adequate flow.
    - a. Manually adjust ball-type balancing valves in hot-water-circulation return piping to provide hot-water flow in each branch.
    - b. Adjust calibrated balancing valves to flows indicated.
  - 5. Remove plugs used during testing of piping and for temporary sealing of piping during installation.
  - 6. Remove and clean strainer screens. Close drain valves and replace drain plugs.
  - 7. Remove filter cartridges from housings and verify that cartridges are as specified for application where used and are clean and ready for use.
  - 8. Check plumbing specialties and verify proper settings, adjustments, and operation.

### 3.13 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
  - 1. Lead Testing Prior to Commencing Construction:
    - a. Collect and test water samples in accordance with NYS Law 10 CRR-NY 67-4.
    - b. Collect a first-draw sample from a cold-water outlet at each tap in the building where work is to be performed.
    - c. Have samples analyzed for lead content by a State Certified testing lab approved to perform such analyses by the Department's Laboratory Approval Program (ELAP). Submit copy of results to Architect/Engineer as a base line of water quality in the building before construction.
      - 1) Notify Owner and Architect in writing of any outlets that exceed the lead action level (5 micrograms per liter).



2. Lead Testing After Construction is Complete:
  - a. Collect and test water samples in accordance with NYS Law 10 CRR-NY 67-4.
  - b. Collect a first-draw sample from a cold-water outlet at each tap in the building where work was performed.
  - c. Have samples analyzed for lead content by a State Certified testing lab approved to perform such analyses by the Department's Laboratory Approval Program (ELAP). Submit copy of results to Architect/Engineer.
  - d. Replace faucets and/or supply stops with new materials, and retest portion thereof until sample results are below the lead action level (5 micrograms per liter).
3. Piping Inspections:
  - a. Do not enclose, cover, or put piping into operation until it has been tested and inspected by the Owner's Representative.
  - b. During installation, notify Owner's Representative at least two days before inspection must be made. Perform tests specified below in presence of Owner's Representative:
    - 1) Roughing-in Inspection: Arrange for inspection of piping before concealing or closing in after roughing in and before setting fixtures.
    - 2) Final Inspection: Arrange for authorities having jurisdiction to observe tests specified in "Piping Tests" Subparagraph below and to ensure compliance with requirements.
  - c. Reinspection: If Owner's Representative finds that piping will not pass tests or inspections, make required corrections and arrange for reinspection.
  - d. Reports: Prepare inspection reports and have them signed by the Owner's Representative.
4. Above Grade Piping Tests:
  - a. Initial Test:
    - 1) Do not connect fixtures, equipment and solenoid valves into system during this test.
    - 2) Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
    - 3) Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.



- 4) Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
- 5) Cap and subject piping to static water pressure of 150 psig, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
- 6) Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.
- 7) Prepare reports for tests and for corrective action required.

b. Test After Fixtures are Connected:

- 1) Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
- 2) Test system again for 2 hours at 75 psig or prevailing water pressure, whichever is higher.
- 3) Repair leaks and defects at fixture and equipment connections or at solenoid valves, and retest piping or portion thereof until satisfactory results are obtained.
- 4) Prepare reports for tests and for corrective action required.

B. Domestic water piping will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 22 11 16



## **SECTION 22 11 19 - DOMESTIC WATER PIPING SPECIALTIES**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Hose bibbs.
  - 2. Drain valves.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for domestic water piping specialties. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
  - 1. Water meters.
- B. As-Specified Data: If the product to be incorporated in the Work is as specified by manufacturer name and product designation in this Specification Section, submit the “**As-Specified Verification Form**” (attached to Section 01 33 00 “Submittal Procedures”) for each item listed below; otherwise submit full Product Data for the following:
  - 1. Hose bibbs.
  - 2. Hose-end drain valves.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Test and inspection reports.
- B. Field quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For domestic water piping specialties to include in emergency, operation, and maintenance manuals.



## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS FOR PIPING SPECIALTIES

- A. Domestic water piping specialties intended to convey or dispense water for human consumption are to comply with the SDWA, requirements of authorities having jurisdiction, and NSF 61 and NSF 372, or to be certified in compliance with NSF 61 and NSF 372 by an American National Standards Institute (ANSI)-accredited third-party certification body that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 psig unless otherwise indicated.

### 2.3 STRAINERS FOR DOMESTIC WATER PIPING

- A. Y-Pattern Strainers:
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Inc; Model T-222-A or F-721-A or comparable product by one of the following:
    - a. Conbraco Industries, Inc.
    - b. Crane Co.; Crane Valve Group; Crane Valves.
    - c. Crane Co.; Crane Valve Group; Jenkins Valves.
    - d. Crane Co.; Crane Valve Group; Stockham Div.
    - e. Hammond Valve.
    - f. Milwaukee Valve Company.
    - g. WATTS.
    - h. Zurn Industries, LLC.
  - 2. Pressure Rating: 125 psig minimum unless otherwise indicated.
  - 3. Body: Bronze for NPS 2 and smaller.
  - 4. Screen: Stainless steel with round perforations unless otherwise indicated.
  - 5. Perforation Size:
    - a. Strainers NPS 2 and Smaller: 0.020 inch.
  - 6. Drain: Pipe plug.

### 2.4 HOSE BIBBS

- A. Hose Bibbs:
  - 1. Standard: ASME A112.18.1 for sediment faucets.



2. Body Material: Bronze.
3. Seat: Bronze, replaceable.
4. Supply Connections: NPS 1/2 or NPS 3/4 threaded or solder-joint inlet.
5. Outlet Connection: Garden-hose thread complying with ASME B1.20.7.
6. Pressure Rating: 125 psig.
7. Vacuum Breaker: Integral nonremovable, drainable, hose-connection vacuum breaker complying with ASSE 1011.
8. Finish for Equipment Rooms: Rough bronze, or chrome or nickel plated.
9. Finish for Service Areas: Rough bronze.
10. Finish for Finished Rooms: Chrome or nickel plated.
11. Operation: Wheel handle or operating key.
12. Include operating key with each operating-key hose bibb.
13. Include integral wall flange with each chrome- or nickel-plated hose bibb.

## 2.5 DRAIN VALVES

### A. Ball-Valve-Type, Hose-End Drain Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Inc; Model T-585-70-HC or comparable product by one of the following:
  - a. Conbraco Industries, Inc.
  - b. Crane Co.; Crane Valve Group; Crane Valves.
  - c. Crane Co.; Crane Valve Group; Jenkins Valves.
  - d. Crane Co.; Crane Valve Group; Stockham Div.
  - e. Hammond Valve.
  - f. Milwaukee Valve Company.
  - g. Red-White Valve Corp.
2. Standard: MSS SP-110 for standard-port, two-piece ball valves.
3. Pressure Rating: 400-psig minimum CWP.
4. Size: NPS 3/4.
5. Body: Copper alloy.
6. Ball: Chrome-plated brass.
7. Seats and Seals: Replaceable.
8. Handle: Vinyl-covered steel.
9. Inlet: Threaded or solder joint.
10. Outlet: Threaded, short nipple with garden-hose thread complying with ASME B1.20.7 and cap with brass chain.



B. Stop-and-Waste Drain Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide NIBCO Inc.; S-FP-600-AD-LF or comparable product by one of the following:
  - a. Conbraco Industries, Inc.
  - b. Hammond Valve.
  - c. Milwaukee Valve Company.
  - d. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
2. Standard: MSS SP-110 for ball valves.
3. Pressure Rating: 200-psig minimum CWP or Class 125.
4. Size: NPS 3/4.
5. Body: Lead-free copper alloy or ASTM B 62 bronze.
6. Drain: NPS 1/8 side outlet with cap.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF PIPING SPECIALTIES

- A. Y-Pattern Strainers: For water, install on supply side of each water meter.

### 3.2 PIPING CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. When installing piping specialties adjacent to equipment and machines, allow space for service and maintenance.

### 3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  2. Operational Test: After electrical circuitry has been energized, start units to confirm unit operation.
  3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Domestic water piping specialties will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

END OF SECTION 22 11 19



## **SECTION 22 14 29 – SUMP PUMPS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Submersible sump pumps.
  - 2. Sump-pump basins and basin covers.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Wiring Diagrams: For power, signal, and control wiring.

#### **1.4 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For pumps and controls, to include in operation and maintenance manuals.

#### **1.5 QUALITY ASSURANCE**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. UL Compliance: Comply with UL 778 for motor-operated water pumps.

#### **1.6 DELIVERY, STORAGE, AND HANDLING**

- A. Retain shipping flange protective covers and protective coatings during storage.
- B. Protect bearings and couplings against damage.
- C. Comply with pump manufacturer's written rigging instructions for handling.



## PART 2 - PRODUCTS

### 2.1 SUBMERSIBLE SUMP PUMPS

#### A. Submersible, Fixed-Position, Single-Seal Sump Pumps:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product by Liberty Pumps as indicated on Drawings or comparable product by one of the following:
  - a. Bell & Gossett Domestic Pump; ITT Corporation.
  - b. Goulds Pumps; ITT Corporation.
  - c. Grundfos Pumps Corp.
  - d. Little Giant Pump Co.
  - e. Weil Pump Company, Inc.
  - f. Zoeller Company.
2. Description: Factory-assembled and -tested sump-pump unit.
3. Pump Type: Submersible, end-suction, single-stage, close-coupled, overhung-impeller, centrifugal sump pump as defined in HI 1.1-1.2 and HI 1.3.
4. Pump Casing: Cast iron, with strainer inlet, legs that elevate pump to permit flow into impeller, and vertical discharge for piping connection.
5. Impeller: Statically and dynamically balanced,, semi open design for clear wastewater handling, and keyed and secured to shaft.
6. Pump and Motor Shaft: Stainless steel, with factory-sealed, grease-lubricated ball bearings.
7. Seal: Mechanical.
8. Motor: Hermetically sealed, capacitor-start type; with built-in overload protection; lifting eye or lug; and three-conductor, waterproof power cable of length required and with grounding plug and cable-sealing assembly for connection at pump.
  - a. Motor Housing Fluid: Oil.
9. Controls:
  - a. Enclosure: NEMA 250, Type 1.
  - b. Automatic Alternator: Start pumps on successive cycles and start multiple pumps if one cannot handle load.
  - c. Float Guides: Pipe or other restraint for floats and rods in basins of depth greater than 60 inches.
  - d. High-Water Alarm: Cover-mounted, compression-probe alarm, with electric bell; 120-V ac, with transformer and contacts for remote alarm bell.



10. Controls:

- a. Enclosure: NEMA 250, Type 1;-mounted.
- b. Switch Type: Mechanical-float type, in NEMA 250, Type 6 enclosures with mounting rod and electric cables.
- c. Automatic Alternator: Start pumps on successive cycles and start multiple pumps if one cannot handle load.
- d. High-Water Alarm: Rod-mounted, NEMA 250, Type 6 enclosure with mechanical-float, mercury-float, or pressure switch matching control and electric bell; 120-V ac, with transformer and contacts for remote alarm bell.

11. Control-Interface Features:

- a. Remote Alarm Contacts: For remote alarm interface.
- b. Building Automation System Interface: Auxiliary contacts in pump controls for interface to building automation system and capable of providing the following:
  - 1) On-off status of pump.
  - 2) Alarm status.

2.2 SUMP PUMP CAPACITIES AND CHARACTERISTICS

- A. Refer to schedule on the Drawings.

2.3 SUMP-PUMP BASINS AND BASIN COVERS

- A. Basins: Factory-fabricated, watertight, cylindrical, basin sump with top flange and sidewall openings for pipe connections.
  - 1. Material: Fiberglass or Polyethylene.
  - 2. Reinforcement: Mounting plates for pumps, fittings, and accessories.
  - 3. Anti floatation anchor Flange: Same material as or compatible with basin sump, cast in or attached to sump, in location and of size required to anchor basin in concrete slab.
- B. Basin Covers: Fabricate metal cover with openings having gaskets, seals, and bushings; for access to pumps, pump shafts, control rods, discharge piping, vent connections, and power cables.
  - 1. Reinforcement: Steel or cast iron, capable of supporting foot traffic for basins installed in foot-traffic areas.
- C. Capacities and Characteristics:
  - 1. Diameter: 48".



2. Depth: 60" minimum.
3. Inlet No. 1:
  - a. Drainage Pipe Size: 2".
  - b. Type: Threaded outside.
4. Cover Material: Fiberglass reinforced plastic grating. Loading to handle 30 lb/ft minimum
5. Cover Diameter: 48" minimum, but not less than outside diameter of basin top flange.
6. Vent Size: Not required.

## 2.4 MOTORS

- A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements.
  1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
- B. Motors for submersible pumps shall be hermetically sealed.

## PART 3 - EXECUTION

### 3.1 EARTHWORK

- A. Excavation and filling are specified in Section 312000 "Earth Moving."

### 3.2 EXAMINATION

- A. Examine roughing-in for plumbing piping to verify actual locations of storm drainage piping connections before sump pump installation.

### 3.3 INSTALLATION

- A. Pump Installation Standards: Comply with HI 1.4 for installation of sump pumps.

### 3.4 CONNECTIONS

- A. Comply with requirements for piping specified in Section 22 13 16 "Sanitary Waste and Vent Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to equipment to allow service and maintenance.



### 3.5 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- B. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- C. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection.
  - 2. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Pumps and controls will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

### 3.6 STARTUP SERVICE

- A. Perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.

### 3.7 ADJUSTING

- A. Adjust pumps to function smoothly, and lubricate as recommended by manufacturer.
- B. Adjust control set points.

### 3.8 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain controls and pumps.

END OF SECTION 22 14 29



**SECTION 22 42 13.13 - COMMERCIAL WATER CLOSETS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:

- 1. Flushometer valves.

**1.3 DEFINITIONS**

- A. Effective Flush Volume: Average of two reduced flushes and one full flush per fixture.
- B. WaterSense Fixture: Water closet and/or flushometer valve/tank certified by the EPA to meet the WaterSense performance criteria.

**1.4 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals required by this Section concurrently.

**1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water closets. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
  - 1. Water Closet "A" flushometer valves.
  - 2. Water Closet "B" flushometer valves.

**1.6 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For flushometer valves and electronic sensors to include in operation and maintenance manuals.

**1.7 MAINTENANCE MATERIALS**

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Flushometer-Valve Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than six of each type.



## 1.8 QUALITY ASSURANCE

### A. Water Conservation:

1. Provide plumbing fixtures complying with applicable provisions of Section 604.4 of the Plumbing Code of New York State.

### B. Regulatory Requirements: Comply with requirements in 36 CFR Part 1191 – “Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines”; for plumbing fixtures for people with disabilities.

## PART 2 - PRODUCTS

## 2.1 PERFORMANCE REQUIREMENTS

### A. Standards:

1. Comply with ASME A112.19.5/CSA B45.15 for flush valves and spuds for water closets and tanks.
2. Comply with ASSE 1037/ASME A112.1037/CSA B125.37 for flush valves.
3. Comply with ICC A117.1 for ADA-compliant water closets.

### B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

### C. Source Limitations: Obtain water closet flushometers from single source from single manufacturer.

## 2.2 FLUSHOMETER VALVES

### A. Manual Flushometer Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan Valve Company; Sloan Model No. 110-3.5 or comparable product by the following:
  - a. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Minimum Pressure Rating: 125 psig.
3. Features: Include angle stop bumper, sweat solder adapter, cast set screw escutcheon, casing tube, integral check stop and backflow-prevention device.
4. Material: Brass body with corrosion and chloramine resistant components.
5. Exposed Flushometer-Valve Finish: Chrome plated.
6. Consumption: 3.5 gal.per flush.



7. Minimum Inlet: NPS 1.
8. Minimum Outlet: NPS 1-1/4.

B. Concealed, Hard-Wired Flushometer Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan Valve Company; Royal Sensor Model No. 611 ESS WB-1.28-OR-HW or comparable product by the following:
  - a. Zurn Industries, LLC; Commercial Brass and Fixtures.
2. Minimum Pressure Rating: 125 psig.
3. Features: 13" x 17" x 4" 16-gauge steel wall box with access panel and vandal resistant screws. Includes integral check stop and backflow-prevention device.
4. Material: Brass body with corrosion and chloramine resistant components.
5. Concealed Flushometer-Valve Finish: Chrome plated.
6. Panel Finish: 14-1/2" x 18-1/2" 15-gauge Type 304 stainless steel with a #4 finish.
7. Actuator: Solenoid complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
8. Trip Mechanism: Hard-wired electronic sensor complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
9. Consumption: 1.28 gal. per flush.
10. Minimum Inlet: NPS 1.
11. Minimum Outlet: NPS 1-1/4.
12. Provide 4" x 4" x 2-1/2" electric boxes as required by manufacturer for each hard wired flushometer.
13. Provide control wiring between flushometer solenoid valve, sensor, and transformer.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before water-closet installation.
- B. Examine walls and floors for suitable conditions where water closets will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Beginning installation constitutes Contractor's acceptance of substrates and conditions.



### 3.2 INSTALLATION

#### A. Flushometer-Valve Installation:

1. Install flushometer-valve, water-supply fitting on each supply to each water closet.
2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
3. Install flushometer valves for accessible water closets such that the operating handle faces the approach or transfer side of the water closet stall. Install sensor operated flushometer valves in the same manner so that, in the event that the sensor operated flushometer valve is replaced by a manually operated valve, the handle will comply with the above requirement.
4. Provide 4" x 4" x 2-1/2" electric boxes as required by manufacturer for each hard wired flushometer.
5. Provide control wiring between flushometer solenoid valve, sensor, and transformer.

#### B. Wall Flange and Escutcheon Installation:

1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations and within cabinets and millwork.
2. Install escutcheon so set screw is facing floor.

#### C. Joint Sealing:

1. Comply with sealant requirements specified in Section 07 92 00 "Joint Sealants."
2. Seal joints between water closets and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
3. Match sealant color to water-closet color.

### 3.3 ELECTRICAL CONNECTIONS

#### A. Install control wiring to field-mounted control devices.

#### B. Install electrical devices furnished by manufacturer, but not factory mounted in accordance with NFPA 70 and NECA 1.

#### C. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate to be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inch high.

### 3.4 ADJUSTING

#### A. Operate and adjust water closets and controls. Replace damaged and malfunctioning water closets, fittings, and controls.

#### B. Adjust water pressure at flushometer valves to produce proper flow.



### 3.5 CLEANING AND PROTECTION

- A. Clean water closets and fittings with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed water closets and fittings.

END OF SECTION 22 42 13.13



**SECTION 22 42 13.16 - COMMERCIAL URINALS****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:

- 1. Flushometer valves.

**1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals required by this Section concurrently.

**1.4 ACTION SUBMITTALS**

- 1. Urinal "A" flushometer valves.
  - 2. Urinal "B" flushometer valves.

**1.5 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For flushometer valves and electronic sensors to include in operation and maintenance manuals.

**1.6 MAINTENANCE MATERIALS**

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Flushometer-Valve Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than one of each type.
  - 2. Waterless Urinal Trap-Seal Liquid: Equal to 1 gal. for each urinal installed.

**1.7 QUALITY ASSURANCE**

- A. Water Conservation:
  - 1. Provide plumbing fixtures complying with applicable provisions of Section 604.4 of the Plumbing Code of New York State.



- B. Regulatory Requirements: Comply with requirements in 36 CFR Part 1191 – “Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines”; for plumbing fixtures for people with disabilities.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Source Limitations: Obtain urinal flushometers from single source from single manufacturer.

### 2.2 FLUSHOMETER VALVES

#### A. Manual Flushometer Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan Valve Company; Sloan Standard Model No. 186-0.5-DFB YBYC or comparable product by the following:
  - a. Zurn Industries, LLC.
2. Standard: ASSE 1037.
3. Minimum Pressure Rating: 125 psig.
4. Features: Include sweat solder adapter, cast set screw escutcheon, casing tube, integral check stop and backflow-prevention device.
5. Material: Brass body with corrosion and chloramine resistant components.
6. Exposed Flushometer-Valve Finish: Chrome plated.
7. Style: Exposed.
8. Consumption: 0.5 gal. per flush.
9. Minimum Inlet: NPS 3/4.
10. Minimum Outlet: NPS 3/4.

#### B. Concealed, Hard-Wired Flushometer Valves:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Sloan Valve Company; Sloan Royal Sensor Model No. 195 ESS-0.5-L/OR-W/BOX-2-10-3/4-LDIM-HW-24V or comparable product by the following:
  - a. Zurn Industries, LLC.



2. Standard: ASSE 1037.
3. Minimum Pressure Rating: 125 psig.
4. Features: 13" x 17" x 4" 16-gauge steel wall box with access panel and vandal resistant screws. Includes integral check stop and backflow-prevention device.
5. Material: Brass body with corrosion and chloramine resistant components.
6. Panel Finish: 14-0 1/2" x 18-0 1/2" 15-gauge Type 304 stainless steel with a #4 finish.
7. Style: Concealed.
8. Actuator: Solenoid complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
9. Trip Mechanism: Hard-wired electronic sensor complying with UL 1951, and listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
10. Consumption: 0.5 gal. (1.9 L per flush).
11. Minimum Inlet: NPS 3/4.
12. Minimum Outlet: NPS 3/4.
13. Provide 4" x 4" x 2-1/2" electric boxes as required by manufacturer for each hard wired flushometer.
14. Provide control wiring between flushometer solenoid valve, sensor, and transformer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION

#### A. Flushometer-Valve Installation:

1. Install flushometer-valve water-supply fitting on each supply to each urinal.
2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
3. Install lever-handle flushometer valves for accessible urinals with handle mounted on open side of compartment.



B. Wall Flange and Escutcheon Installation:

1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations.
2. Install deep-pattern escutcheons if required to conceal protruding fittings.

C. Joint Sealing:

1. Seal joints between urinals and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
2. Match sealant color to urinal color.
3. Comply with sealant requirements specified in Section 07 92 00 "Joint Sealants."

3.3 PIPING CONNECTIONS

- A. Connect urinals with water supplies and soil, waste, and vent piping. Use size fittings required to match urinals.

3.4 ELECTRICAL CONNECTIONS

- A. Install control wiring to field-mounted control devices.
- B. Connect control wiring in accordance with Section 26 05 19 "Low-Voltage Electrical Power Conductors and Cables."
- C. Ground equipment in accordance with Section 26 05 26 "Grounding and Bonding for Electrical Systems."
- D. Install electrical devices furnished by manufacturer, but not factory mounted in accordance with NFPA 70 and NECA 1.
- E. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.
1. Nameplate to be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inch high.

3.5 ADJUSTING

- A. Operate and adjust urinals and controls. Replace damaged and malfunctioning urinals, fittings, and controls.
- B. Adjust water pressure at flushometer valves to produce proper flow.



### 3.6 CLEANING AND PROTECTION

- A. Clean urinals and fittings with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed urinals and fittings.
- C. Do not allow use of urinals for temporary facilities unless approved in writing by Owner.

END OF SECTION 22 42 13.16



**SECTION 22 45 00 - EMERGENCY PLUMBING FIXTURES****PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Eyewash equipment.

**1.2 DEFINITIONS**

- A. Portable, Self-Contained Emergency Plumbing Fixture: Fixture with flushing-fluid supply.
- B. Tepid: Between 60 and 100 deg F.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated. Include flow rates and capacities, furnished specialties, and accessories.
  1. Self-Contained Eyewash Unit.

**1.4 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For emergency plumbing fixtures.

**1.5 MAINTENANCE MATERIAL SUBMITTALS**

- A. Extra Stock Material: Furnish extra materials to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  1. Flushing-Fluid Solution: Separate lot and equal to at least 100 percent of amount of solution installed for each self-contained unit.

**PART 2 - PRODUCTS****2.1 PERFORMANCE REQUIREMENTS**

- A. Comply with ANSI/ISEA Z358.1 for emergency plumbing fixtures including third-party certification of fixtures.



## 2.2 EYEWASH EQUIPMENT

### A. Eyewash Units - Standard, Self-Contained:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Bradley Corporation; No. S19-921 or a comparable product by one of the following:
  - a. Acorn Safety; a Division of Morris Group International.
  - b. Encon Safety Products.
  - c. Guardian Equipment Co.
  - d. Haws Corporation.
  - e. Speakman Company.
  - f. WaterSaver Faucet Co.
2. Source Limitations: Obtain eyewash units, standard, self-contained, from single manufacturer.
3. Capacity: Not less than 0.4 gpm for at least 15 minutes.
4. Gravity Tank: 7 gal. minimum, plastic, and suitable for shelf mounting.
5. Flushing Fluid: Medically acceptable solution manufactured and labeled in accordance with applicable regulations.
6. Actuator: Pull-down front panel or pull strap.
7. Spray Heads: Protected, two mounted on tank.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION OF EMERGENCY PLUMBING FIXTURE

- A. Assemble emergency plumbing fixture piping, fittings, control valves, and other components.
- B. Install fixtures level and plumb.
- C. Fasten fixtures to substrate.
- D. Fill self-contained fixtures with flushing fluid.

### 3.3 IDENTIFICATION

- A. Install equipment nameplates or equipment markers on emergency plumbing fixtures and equipment and equipment signs on water-tempering equipment. Comply with requirements for identification materials specified in Section 22 05 53 "Identification for Plumbing Piping and Equipment."



### 3.4 FIELD QUALITY CONTROL

#### A. Tests and Inspections:

1. Perform each visual and mechanical inspection.
2. Operational Test: Start units to confirm proper unit operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
4. Emergency plumbing fixtures and water-tempering equipment will be considered defective if they do not pass tests and inspections.

### 3.5 ADJUSTING

- A. Operate and adjust emergency plumbing fixtures and controls. Replace damaged and malfunctioning fixtures and controls.
- B. Adjust or replace fixture flow regulators for proper flow.

### 3.6 CLEANING AND PROTECTION

- A. Clean emergency plumbing fixtures with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed emergency plumbing fixtures and fittings.
- C. Do not allow use of emergency plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 22 45 00



**SECTION 26 05 00.01 – COMMON WORK FOR ELECTRICAL****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section and to all of Divisions 26.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. General requirements applicable to components and systems included in Electric Contract.
- B. Products Installed but Not Furnished Under This Section
  - 1. Make electrical connections to equipment shown on Drawings and furnished by other Contractors. Obtain approved wiring diagrams and location drawings for roughing in and final connections from Contractor furnishing equipment.

**1.3 REFERENCES**

- A. IBC International Building Code
- B. IEEE Institute of Electrical and Electronics Engineers, Inc. (The)
- C. IES Illuminating Engineering Society of North America
- D. NEC National Electrical Code
- E. NEMA National Electrical Manufacturers' Association
- F. NETA International Electrical Testing Association
- G. NFPA National Fire Protection Association
- H. UL Underwriters' Laboratories, Inc.

**1.4 SYSTEM DESCRIPTION**

- A. Design Requirements - Provide complete systems, properly tested, balanced, and ready for operation including necessary details, items and accessories although not expressly shown or specified, including (but not limited to):
  - 1. Wiring and raceway for work specified in Project Manual and shown on Drawings.
  - 2. Electrical devices and equipment for work specified in Project Manual and shown on Drawings.



- B. Electric Layouts: Arrange panels; disconnect switches, enclosed breakers, equipment, raceways, and similar components neatly, orderly and symmetrically. Arrangements shown on Drawings are diagrammatic only; provide and adjust raceways, wiring, and other components as required.
  - 1. Power Interruptions and Scheduled Outages: Coordinate scheduling of all power interruptions and outages with Owner.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for items listed below:. Include ratings, and furnished specialties and accessories.
  - 1. Panelboards.
  - 2. Disconnects.
  - 3. Handholes
  - 4. Straight blade receptacles
  - 5. Toggle switches
  - 6. Device covers
  - 7. Enclosed switches and circuit breakers

## 1.6 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Codes and Standards: Comply with applicable Federal, State and local building and electrical codes, laws, ordinances, and regulations, and comply with applicable NFPA, National Electrical Code and utility company requirements and regulations. Provide Underwriters Laboratories Seal on all materials.
  - 2. Permits and Inspections: Obtain approvals, tests, and inspections required by Architect, Engineer, local electrical inspector, agent or agency specified in Project Manual, or National, State, or local codes and ordinances.
  - 3. Schedule electrical inspection by an agency acceptable to the local authority having jurisdiction and submit final inspection certificate to Architect.
  - 4. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction and marked for intended use.

## 1.7 ALTERATION PROCEDURES

- A. In locations where existing devices are indicated to be disconnected and removed and existing power circuit or communications cable is not scheduled to be reused:
  - 1. Remove circuit conductors back to source.



2. Modify panel directory for that circuit.
  3. Remove all existing exposed and unexposed accessible raceway.
  4. Provide blank cover plates or wall infill (as indicated on plans) and as described below:
    - a. For single gang and multi-gang switch boxes in public or occupied spaces; stainless steel coverplates.
    - b. For single gang and multi-gang boxes in un-occupied spaces; stainless steel, galvanized steel or PVC coverplates.
    - c. For boxes larger than standard switch boxes in public or occupied spaces; remove existing box and provide wall infill, matching existing sub-surface and finished surface conditions. Paint wall to match surrounding finishes.
    - d. For boxes larger than standard switch boxes in un-occupied spaces; 18 gage galvanized sheet metal coverplate with machined edges. Prime and paint to match surrounding finish conditions.
  5. Patch and paint existing walls where disturbed by the electrical work.
- B. In locations where existing devices are to remain in place, ensure circuits feeding such devices remain operational. Modify existing circuits as required to allow new construction to occur and to maintain necessary circuitry to existing devices for complete and proper operation.

## PART 2 - PRODUCTS

### 2.1 CONDUCTORS AND CABLES

- A. Conductors: Copper complying with NEMA WC 70/ICEA S-95-658.
  1. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN/THWN-2 and Type XHHW-2.
- B. Cable: Comply with NEMA WC 70/ICEA S-95-658 for metal-clad cable, Type MC with ground wire.

### 2.2 CONNECTORS AND SPLICES

- A. Conductors No. 8 AWG and smaller: Screw on, wing nut wire connectors with fixed square wire threads and wide throated skirt. UL 486C Listed.
- B. Conductors No. 6 AWG to 3/0 AWG: Bolt on type or crimped type compression, seamless copper connectors using hand or hydraulic tool, color coded to wire size. Connector shall be electro-tin plated to resist electrolytic corrosion. UL 486A and UL 486B Listed.



- C. Conductors No. 4/0 AWG and larger: Compression type solderless connector, long barrel seamless copper with minimum 2 pressure points per conductor. Fully compatible with industry standard crimping tool-die sets. Color coded to wire size and electro-tin plated to resist electrolytic corrosion. UL 486A Listed.

## 2.3 METAL CONDUIT, TUBING AND FITTINGS

- A. Galvanized Rigid Steel Conduit (GRC): Rigid, hot dipped galvanized steel with galvanized threaded malleable iron fittings and bushings with insulated throat (galvanized steel). ANSI C80.1 and UL 6.
- B. Electrical Metallic Tubing (EMT): Metallic galvanized steel tube with galvanized steel compression or setscrew type fittings and bushings with insulated throat (galvanized steel). ANSI C80.3 and UL 797.
- C. Flexible Metal Conduit (FMC): Flexible, interlocked aluminum metal strip with galvanized screw-in type steel fittings. UL 1.
- D. Liquid Tight Flexible Metal Conduit (LFMC) : Liquid-tight flexible metal raceway with single, flexible, continuous, interlocked and double-wrapped steel core galvanized inside and outside, coated with liquid tight jacket of flexible polyvinyl chloride (PVC). UL 360.
- E. Fittings:
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
  - 2. Fittings for EMT:
    - a. Material: Steel .
    - b. Type: Set screw or compression.
  - 3. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

## 2.4 NONMETALLIC CONDUIT AND TUBING

- A. RNC: NEMA TC 2, UL 651, Type EPC-40-PVC, with matching fittings by same manufacturer as the conduit.
- B. ENT: Comply with NEMA TC 13 and UL 1653.
- C. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- D. LFNC: UL 1660.
- E. Fittings for LFNC: UL 514B.
- F. Solvents and Adhesives: As recommended by conduit manufacturer.



## 2.5 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Outlet Boxes
  - 1. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
  - 2. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
  - 3. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
  - 4. Materials
    - a. Recessed Applications and Exposed Applications in Unfinished Spaces: Galvanized, stamped steel.
    - b. Boxes in stud walls shall be 4" square, 2 1/8" deep boxes with raised covers for power circuits. Provide "Far-Side" box support to keep box alignment parallel with wall face.
    - c. Boxes in masonry walls shall be 3 1/2" deep masonry boxes, single or multigang as required
    - d. Exposed Applications: In finished spaces requiring exposed applications, provide boxes to match surface raceway system. In situations where surface mount conduits are allowed, conduit style boxes shall be used.
    - e. Concrete and Wall in Wet Locations: Heavy duty cast aluminum, thermoset protective silver grey finish, with threaded mounting posts.
    - f. Weatherproof Outlet Boxes: Corrosion-resistant cast metal weatherproof outlet wiring boxes of appropriate type, shape, size and depth, with threaded conduit ends and cast metal face plates with cover suitably configured for each application; including face plate gaskets and corrosion resistant fasteners. Do not compromise outlet weatherproof integrity when attachment plug is inserted.
    - g. Junction and Pull Boxes: Galvanized code gauge sheet steel boxes with screw-on covers, of appropriate type, shape and size suitable for box location and installation with welded seams and equipped with stainless steel nuts, bolts, screws and washers.
  - 5. Covers: Design and style for each type, outlet, junction box, etc.; NEMA rated for each location.



## 2.6 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND CABLING

- A. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
- B. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
- C. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
- D. Cover Legend: Molded lettering of system contained within.

## 2.7 MOLDED-CASE CIRCUIT BREAKER SWITCHES

- A. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- B. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

## 2.8 ENCLOSED SWITCH AND CIRCUIT BREAKER ENCLOSURES:

- A. NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.

# PART 3 - EXECUTION

## 3.1 CUTTING AND PATCHING

- A. Furnish and install sleeves, inserts, panels, raceways, boxes, and similar infrastructure., ahead of general construction work and maintain Contractor personnel at Site during installation of general construction work to be responsible for and to maintain these items in position.

## 3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Feeders and Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- B. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.
- C. Exposed Branch Circuits and Concealed Branch Circuits in Concrete, below Slabs-on-Grade, Underground, in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.



### 3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Wire and Cable Installation: Install all wire and cable in approved raceway; with exit light circuits, emergency lighting circuits, and special systems wiring installed in separate raceways. Use UL approved lubricants for wire pulling. Tag all feeders, subfeeders, special system wiring and branch circuit wiring at each pull box, junction box, and gutter space indicating point of origin and termination. Install green grounding wire in all raceways for connection to equipment, motors, transformers, and similar equipment.
- B. Splices and Terminations: Make all splices accessible. Insulate all splices, taps, and connections to insulation value of conductor. Terminate low voltage cables with termination blocks.
- C. Common Neutral Conductor: Do not use common neutral for multiple branch circuits.
- D. Replace wiring damaged during installation.
- E. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- F. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- G. Metal Clad Type "MC" Cable:
  - 1. Install MC cable, parallel and perpendicular to surfaces or structural members following surface contours, where possible.
  - 2. Do not use MC cable for home runs (from panel to first device in branch circuit).
  - 3. Do not install exposed metal clad cable in any areas, including mechanical and electrical spaces.
  - 4. Do not penetrate floor slabs with MC cable.
  - 5. Metal clad cable may be used for switch, receptacle, light fixture, device and fixture branch circuit wiring above ceilings and in walls beyond corridor walls.
  - 6. MC cable shall include a neutral, whether used or not, to a light switch location.
  - 7. Above corridor ceilings, use MC cable for 6 foot light fixture whips.
- H. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.
- I. Provide insulated, green, copper equipment ground conductor for each branch and feeder circuit.
- J. Metal Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor to the pole in addition to the grounding conductor installed with branch-circuit conductors.



### 3.4 RACEWAY APPLICATION

- A. Raceway Installation: Securely support raceway from building construction, separately from outlet boxes and junction boxes. Secure to masonry surfaces with expansion anchors. Use galvanized hanger rods, inserts and hangers. Conceal all raceway runs except in mechanical rooms, storage room ceilings, and areas above suspended ceilings. Run exposed raceway neatly, parallel and level, to ceilings, walls and floors. Make necessary offsets and bends to comply with construction. Install expansion fittings at all building expansion joints. Support all raceways with clamps per National Electric Code
1. GRC Installation: Use GRC in concrete slabs, below concrete slabs, below grade, damp locations, exterior locations and in hazardous locations. Where exposed leaving concrete slabs, extend minimum 6 inches above and below slabs. Use GRC elbows when penetrating concrete slab from PVC raceway below or in slabs.
  2. RNC: Use for underground applications, in slabs, and below slabs. Provide rigid raceway when extending through slabs. Install in accordance with requirements of Article 352 of NEC. Make solvent-cemented joints in accordance with recommendations of manufacturer.
  3. EMT: Use EMT for non-hazardous, dry locations above grade. As a minimum, use EMT in corridor ceilings, for home runs and in all unoccupied exposed interior areas. Surface mounted EMT shall not be used in finished areas without written permission from the Architect or Owner.
  4. FMC: Use flexible metal conduit for final connections to motors, step-down transformers, vibrating machines, etc. Terminate with clamp type connectors and anti-short bushing. Maximum length of three feet.
  5. LFMC: Use a maximum of two feet of liquid tight flexible conduit for connection of motors and for other electrical equipment where subject to movement and vibration.
- B. Minimum Raceway Size: 1/2-inch (16-mm)
- C. Surface Raceways: Use surface raceways in finished spaces to conceal new cabling that cannot be installed above accessible ceiling or within walls. Use surface raceway only when raceway type and routing are approved by Architect and Owner's representative.

### 3.5 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit.
  2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.



3. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
4. Provide underground warning tape.

### 3.6 LIGHTING AND APPLIANCE PANELBOARD INSTALLATION

- A. Install panelboards and accessories according to NECA 407. Comply with NECA 1.
- B. Mount top of trim 90 inches above finished floor, unless otherwise indicated, and after ensuring the operating handle of the top-most switch or circuit breaker, in on position, is not higher than 79 inches (2000 mm) above the finished floor or grade.
- C. Mount panelboard cabinet plumb and rigid without distortion of box.
- D. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install filler plates in unused spaces.
- F. Stub two 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub two 1-inch empty conduits below slabs not on grade.

### 3.7 WIRING DEVICE INSTALLATION

- A. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
- B. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
- C. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
- D. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
- E. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
- F. Use a torque screwdriver when a torque is recommended or required by manufacturer.
- G. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
- H. Tighten unused terminal screws on the device.
- I. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.



J. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

K. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

END OF SECTION 26 05 00.01



## **SECTION 31 20 00 - EARTH MOVING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:

1. Preparing subgrades for walks, pavements and turf and grasses.
2. Structural Fill: For backfill under structures, pavements, concrete pads, etc.
3. Granular Fill: Subbase for asphalt paving, concrete paving, etc.
4. Subsurface drainage fill for infiltration drainage, underdrains, etc.
5. Excavating and backfilling for buildings and structures.
6. Excavating and backfilling trenches for utilities and pits for buried utility structures.

- B. Related Requirements:

1. Section 32 92 00 - Turf and Grasses

#### **1.3 DEFINITIONS**

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

- F. Subbase: Granular aggregate layer supporting the slab-on-grade and pavement that also minimizes upward capillary flow of pore water.



- G. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Geotechnical Engineer.
  2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
  3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Geotechnical Engineer or Architect. Unauthorized excavation, as well as remedial work directed by Geotechnical Engineer or Architect shall be without additional compensation.
- H. Fill: Soil materials used to raise existing grades.
- I. Hazardous Soil Materials: Soils that are contaminated with petroleum product and/or hazardous chemicals, waste, or industrial waste.
- J. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
1. Rock Excavation: Track-mounted excavator rated at not less than 222-hp flywheel power with weight of 70,000 lbs or greater and a 30-in wide short-tip radius rock bucket. (Ratings are based on Caterpillar's "Model No. 330B".)
- K. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- L. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below aggregate base, structural fill, drainage fill, or topsoil materials.
- M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
- N. Non-Granular Fill: Soil fill material used to raise existing grades in areas that do not require granular or structural fill.
- O. Well-Graded: Soils containing a good range of all representative particle sizes between the largest and the smallest. All sizes must be represented, and no one size should be either overabundant or missing.
- P. Poorly-Graded: Soils which either contain a narrow range of particle sizes or have some intermediate sizes lacking.



#### 1.4 SUBMITTALS

- A. General: Submit all action submittals and informational submittals required by this Section concurrently.
- B. Action Submittals:
  - 1. Product Data: For each type of the following manufactured products required:
    - a. Geotextiles.
    - b. Warning tapes.
  - 2. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
    - a. Classification according to ASTM D 2487.
    - b. Laboratory compaction curve according to ASTM D 1557.
    - c. Submitted material testing and analysis shall demonstrate that no unsuitable soil groups are present.
    - d. Submitted material testing and analysis shall demonstrate that no absorbent clays are present.
  - 3. Delegated-Design Submittal:
    - a. For excavations greater than or equal to 20 feet in depth require engineered systems design per OSHA requirements, signed and sealed by a professional engineer, and submitted for review.
    - b. Plan for protection of persons passing excavations including diagram or description of means and methods to protect all people from project hazards through the duration of the project shall be submitted for review.
  - 4. Samples for Verification: For the following products, in sizes or quantities indicated below:
    - a. Fill: One-half gallon by volume of material in sturdy container of each type of fill, naming source for each material.
    - b. Geotextile: 12 by 12 inches.
    - c. Warning Tape: 12 inches long; of each color.
  - 5. Verification of Conditions: Written confirmation from installer that installation of Earthwork Materials installed in accordance with specifications.
- C. Informational Submittals:
  - 1. Qualification Data: For qualified testing agency.
  - 2. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, which might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.



## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Qualified Installers as defined below:
  - 1. Earthwork Contractor Experience Requirements: Provide a list of at least four Earthwork projects of comparable size, scope, and quality completed successfully by the proposed Sub Contractor within the past two years that includes the date completed, project Owner's name and current contact information, including telephone numbers and e-mail addresses.
- B. Civil/Structural Preconstruction Conference: Attend Civil/Structural Preconstruction Conference.

## 1.6 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Improvements on Adjoining Property: If work includes improvements on adjoining property, written authorization for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.
  - 1. Do not proceed with work on adjoining property until directed by Architect.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.
- D. Do not commence earth moving operations until temporary and permanent erosion- and sedimentation-control measures, specified in Division 31 Section "Erosion and Sedimentation Control" are in place.
- E. Do not commence earth moving operations until plant-protection measures specified in Division 31 Sections "Erosion and Sedimentation Control" and "Site Clearing" are in place.
- F. The following practices are prohibited within tree- or plant-protection zones:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.



8. Directing vehicle or equipment exhaust towards protection zones.
9. Heat sources, flames, ignition sources, and smoking within or near protection zones.

G. Existing Hazardous Materials:

1. If during the performance of the work suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. If present, hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Soil Materials:

1. General: Provide imported soil materials when sufficient satisfactory soil materials are not available from onsite excavations.
2. Topsoil: Refer to Turf and Grasses Specification, Division 32.

B. Hazardous Materials:

1. Provide fill materials that are not contaminated with petroleum product, hazardous waste or industrial waste.
2. Contamination above federal, state or local requirements is not acceptable. Materials with a visible sheen or petroleum odor shall be rejected.

C. Unsuitable Soils: (Includes excavated native and imported non-granular, granular and structural fill materials)

1. Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
  - a. Soils Materials shall not contain any absorbent aluminum phyllosilicates, including but not limited to: bentonite (sodium, calcium, or potassium), tonstein, montmorillonite, kaolinite. or other absorbent clays.
2. Unsuitable soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
3. Submitted material testing and analysis shall demonstrate that material classification meets ASTM-D2487 USC system criteria and that no unsuitable soil groups, or absorbent clays are present.

D. Non-Granular Fill: Material is to comply with NYSDOT requirements for Select Borrow and Select Fill with modifications shown below. This material is not allowed in areas where granular soils are required, including within the building footprint, below pavement areas or below a synthetic turf athletic field.



1. On-Site Non-Granular Fill

- a. Submittal must be provided demonstrating that on-site soil material meets the criteria outlined in this Section for use as fill material.
- b. Obtain approval of Architect before proceeding with use of on-site material.
- c. Material is to have no particles greater than 3" in maximum dimension, no more than 70% by weight passing the #40 sieve and no more than 20% passing the #200 sieve.
- d. Testing submitted is to demonstrate that proper compaction can be achieved as required in Part 3, Execution.

2. Imported Non-Granular Fill

- a. Where quantity of approved non-granular fill materials required exceeds that available from on-site stockpiles, provide suitable material from off-site sources.
- b. Obtain approval of Architect before proceeding with use of imported fill material.
- c. Material is to have no particles greater than 3" in maximum dimension, no more than 70% passing by weight the #40 sieve and no more than 15% passing the #200 sieve.
- d. Testing submitted is to demonstrate that proper compaction can be achieved as required in Part 3, Execution.

E. Structural Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand.

1. Type 1 Fill (NYSDOT ITEM No. 304.11 Granular Fill) gradation requirements:

<b>Sieve Designation</b>	<b>Percent by Weight Passing Square Mesh Sieves</b>
3 inch	100
2 inch	90 to 100
1/4-inch	30 to 65
#40	5 to 40
#200	0 to 10

F. Granular Fill: Import all granular fill types from off-site sources. Granular fill consists of stone, sand, and gravel, or blends of these materials, free of slag, complying with New York State Department of Transportation (NYSDOT) Standard Specification, Section 304, as modified below:



1. Type 2 Fill (NYSDOT ITEM No. 304.12 / Crushed / Blasted Ledge Rock Stone) Gradation Requirements.

Sieve Designation	Percent by Weight Passing Square Mesh Sieves
2 inch	100
1/4-inch	25 to 60
#40	5 to 40
#200	0 to 10

2. Type 4 Fill (NYSDOT ITEM No. 304.14 / Select Granular Fill) Gradation Requirements.

Sieve Designation	Percent by Weight Passing Square Mesh Sieves
2 inch	100
1/4-inch	30 to 65
#40	5 to 40
#200	0 to 10

- G. Crushed Stone: Crushed stone to complying with New York State Department of Transportation (NYSDOT) Standard Specifications, Section 703-0201 which is product of mechanical crushing. Where indicated, provide the following fill materials, consisting of clean, free of slag, durable, sharp-angled fragments of rock of uniform quality. The crushed stone used as coarse aggregate for all items shall be obtained from sources conforming to the requirements of the NYSDOT as to sampling, testing methods, Quarry Reports and any other required procedures and complying with following requirements:

1. NYSDOT No. 1 Crushed Stone Gradation Requirements (NYSDOT 703-4 # 1 Stone):

Sieve Designation	Percent by Weight Passing Square Mesh Sieves
1 inch	100
1/2-inch	90 to 100
1/4-inch	0 to 15
#200	0 to 1

2. NYSDOT No. 2 Crushed Stone Gradation Requirements (NYSDOT 703-4 #2 Stone):

Sieve Designation	Percent by Weight Passing Square Mesh Sieves
1-1/2 inch	100
1 inch	90 to 100
1/2-inch	0 to 15
#200	0 to 1

- H. Sand for general use and/or utility bedding: ASTM C 33; fine aggregate.
- I. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.



## 2.2 GEOTEXTILES

- A. Separation/Filter Fabric - Nonwoven needle-punched polypropylene geotextile filter/separation fabric complying with the following:

Fabric Property	Value	Test Method
Grab Tensile Strength	120 lb	ASTM D 4632
Grab Tensile Elongation	50 percent	ASTM D 4632
Trapezoid Tear Strength	50 lbs	ASTM D 4533
CBR Puncture Strength	310 lbs min	ASTM D 6241
Apparent Opening Size	No. 70 sieve max	ASTM D 4751
Permittivity	1.7 sec <sup>-1</sup>	ASTM D 4491
Flow Rate	135 gal min/ft <sup>2</sup>	ASTM D 4491
UV Stability	70% after 500 hours	ASTM D 4355

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. TenCate Mirafi - 140N
- b. Amoco - 4547
- c. Geotex – 451

- B. Soil Stabilization Fabric: Heavy duty, commercially manufactured woven polypropylene geotextile meeting the following properties:

Fabric Property	Test Method	Unit	Typical Value
Grab Tensile Strength	ASTM D 4632	lbs	200
Grab Tensile Elongation	ASTM D 4632	%	15
Trapezoidal Tear Strength	ASTM D 4533	lbs	75 min.
CBR Puncture Strength	ASTM D 6241	lbs	700
UV Resistant after 500 hours	ASTM D 4355	% Strength	70
Apparent Opening Size	ASTM D 4751	US Sieve	40
Permittivity	ASTM D 4491	sec <sup>-1</sup>	0.05
Water Flow Rate	ASTM D 4491	gal/min/ft <sup>2</sup>	4.0

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. TenCate Mirafi - 500X
- b. US Fabrics, Inc. - US 200
- c. Carthage Mills – FX-55
- d. Propex – 200 ST

- C. Subsurface Drainage Geotextiles: Refer to Division 33 Section "Storm Utility Drainage Piping".



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verification of Conditions: Examine conditions under which earthwork is to be accomplished in coordination with Installer of materials and components specified in this Section and notify affected Prime Contractors and Architect in writing of any conditions detrimental to proper and timely accomplishment. Do not proceed with earthwork until unsatisfactory conditions have been corrected in manner acceptable to Installer.
  - 1. When Installer confirms conditions as acceptable to ensure proper and timely installation and to ensure requirements for applicable warranty or guarantee can be satisfied, submit to Architect written confirmation from applicable Installer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to Installer.

### 3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
  - 1. Contractor is entirely responsible for strength and adequacy of bracing and shoring, and for safety and support of construction from damage or injury caused by lack of adequate protection or by movement or settlement.
  - 2. Contractors are advised that they are required to comply with Occupational Safety and Health Administration's (OSHA) standards pertaining to excavation.
  - 3. All excavations must be barricaded at all times using either traffic or A-Frame type barricades. Gaps between barricades may be up to 6-inches wide and must be blocked with caution tape.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

### 3.3 UNDERGROUND UTILITY SURVEY

- A. An underground utility survey must be conducted prior to the start of any excavation. Call 811

### 3.4 DEWATERING

- A. Refer to Division 31 Section "Dewatering".
- B. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.



- C. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

- 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

### 3.5 EXPLOSIVES

- A. Explosives: Do not use explosives.

### 3.6 EXCAVATION, GENERAL

- A. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Geotechnical Engineer. Changes in the Contract Time may be authorized for rock excavation.

- 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
    - a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
  - 2. Rock excavation includes removal and disposal of rock (refer to Definitions section: "Rock" paragraph above). Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
    - a. 24 inches outside of concrete forms other than at footings.
    - b. 12 inches outside of concrete forms at footings.
    - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
    - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    - e. 6 inches beneath bottom of concrete slabs-on-grade.
    - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

### 3.7 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
    - a. See Structural Drawings for specific removal and replacement instructions if required.



B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Protect trees and other plants in accordance with requirements in Division 1 Section "Temporary Facilities and Controls" and Division 31 Section "Erosion and Sedimentation Control".

3.8 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.9 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

- C. Trench Bottoms: Excavate trenches 6 inches (150 mm) deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe. Remove projecting stones and sharp objects along trench subgrade.

- D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots in accordance with standard nursery practice and Division 31 Section "Erosion and Sedimentation Control".

3.10 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Geotechnical Engineer determines that unsuitable soil is present, continue excavation and replace with compacted backfill or fill material as directed.



### 3.11 PROOF-ROLLING

- A. Proof-roll subgrade below building slabs, concrete pads and pavements by making a minimum of four (4) passes in two perpendicular directions with a 10-ton roller, or a 1.5-ton trench roller, where access is confined. Do not proof-roll wet or saturated subgrades.
  - 1. Completely proof-roll subgrade in one direction and repeating proof-rolling in direction perpendicular to first direction with a minimum of four overlapping passes.
  - 2. Excavate soft spots, unsuitable soils, and areas of excessive pumping or rutting, as identified by Geotechnical Engineer and as directed by Owner, and replace with compacted backfill or fill as directed. Notify Architect in writing of any required remediation.
  - 3. Foundations: Proof-roll prior to excavation for foundations but after top soil is stripped.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities without additional compensation.

### 3.12 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. CLSM (flowable fill), per this specification section, may be used when approved by Architect.
  - 1. Fill unauthorized excavations under other construction, pipe, or conduit in accordance with this Section unless otherwise directed by Geotechnical Engineer.

### 3.13 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

### 3.14 SOIL STABILIZATION FABRIC

- A. Install soil stabilization fabric: After subgrade has been compacted and proof-rolled, install soil stabilization fabric as specified by the manufacturer, including the following:
  - 1. Lay fabric in the direction of traffic.
  - 2. Overlap fabric side to side and end to end a minimum of two feet.
  - 3. Insure that fabric lies flat during fill placement.



### 3.15 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
  - 2. Surveying locations of underground utilities for Record Documents.
  - 3. Testing and inspecting underground utilities.
  - 4. Removing concrete formwork.
  - 5. Removing trash and debris.
  - 6. Removing temporary shoring and bracing, and sheeting.
  - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

### 3.16 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Place and compact initial backfill of subbase material or satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
  - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- F. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

### 3.17 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows. Refer to Part 2 for material requirements and specific conditions for the use of each type of soil material. All fill materials to be approved by Architect per requirements noted in Part 2.
  - 1. Under grass and planted areas:
    - a. Use satisfactory non-granular fill material.



2. Under walks, pavements and exterior slabs:
    - a. Use Structural Fill below subbase layer and Type 2 granular fill for subbase layer.
  3. Under steps and ramps
    - a. Use structural fill below subbase layer and Type 2 granular fill for subbase layer.
  4. Under building slabs:
    - a. Use structural fill below subbase layer. For subbase, use No. 2 Crushed Stone. See Drawings for depth.
  5. Under footings and foundations:
    - a. Use structural fill.
  6. Under catch basins, manholes, vaults or other underground structures.
    - a. Use structural fill or as noted on drawings.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

### 3.18 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
  2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry density.

### 3.19 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Maximum layer depth before compaction:
1. Under Pavement: Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry weight density according to ASTM D 1557:



1. Under structures, building slabs, steps, synthetic turf and pavements:
  - a. Scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways:
  - a. Scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
3. Under natural turf or unpaved areas:
  - a. Compact each layer of subgrade backfill or fill soil material at 85 percent. Compact all layers beneath the upper 2'-0" to at least 95 percent.
4. Utility trenches:
  - a. Compact each layer of initial and final backfill soil material at 85 percent.
5. Landscape Planting Areas:
  - a. Compact each layer of subgrade backfill or fill soil material at 75 percent.
6. Under catch basins, manholes, vaults or other underground structures.
  - a. Scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.

### 3.20 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  1. Turf or Unpaved Areas: Plus or minus 1 inch.
  2. Walks: Plus or minus 1 inch.
  3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge and within +0" / -1" tolerance of bottom of slab.



### 3.21 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place granular fill base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place granular fill base course under pavements and walks as follows:
  - 1. Place base course material over subgrade under hot-mix asphalt pavement.
    - a. If separation geotextile is shown in details, install on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
  - 2. Shape base course to required crown elevations and cross-slope grades.
  - 3. Place base course 6 inches or less in compacted thickness in a single layer.
  - 4. Place base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  - 5. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

### 3.22 SUBBASE FOR CONCRETE SLABS-ON-GRADE

- A. Place subbase on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact subbase under cast-in-place concrete slabs-on-grade as follows:
  - 1. Place subbase 8 inches or less in compacted thickness in a single layer.
  - 2. Place subbase that exceeds 8 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 8 inches thick or less than 3 inches thick.
  - 3. Compact each layer of subbase to required cross sections and thicknesses to not less than 95 percent of maximum dry density according to ASTM D 4254.

### 3.23 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections unless otherwise noted.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Inspections and tests:
  - 1. Geotechnical observations: Proof rolling procedures, site preparation, unsuitable soils removal, excavations, footing bearing, and fill placement.



2. Field Density Testing:

- a. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Geotechnical Engineer.
- b. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  - 1) Fill under Footings: In each compacted fill layer, 1 compaction test for every 30 linear feet of wall may be taken. 1 compaction test may be made under each individual footing.
  - 2) Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 50 feet or less of wall length, but no fewer than two tests.
  - 3) Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.
  - 4) Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length, but no fewer than two tests.
- c. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.24 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  1. Scarify or remove and replace soil material to depth as directed by Geotechnical Engineer or Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.



3.25 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 20 00



## **SECTION 32 12 16 - ASPHALT PAVING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.
- B. The principle reference for materials and methods is the "New York State Department of Transportation Standard Specifications for Construction and Materials," latest edition (NYSS).

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Hot-mix asphalt paving.
  - 2. Pavement-marking paint.
- B. Related Sections:
  - 1. Section 31 20 00 "Earth Moving" for subgrade and aggregate base preparation and other requirements.

#### **1.3 SUBMITTALS**

- A. General: Submit all action submittals and informational submittals required by this Section concurrently.
- B. Action Submittals:
  - 1. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
    - a. Job-Mix Designs: For each job mix proposed for the Work.
    - b. Paving Schedule
    - c. Paver / Asphalt installation showing joints.
    - d. Equipment to be used including, but not limited to paver(s) and roller(s).
    - e. Location of Mix Plant
    - f. Trucking operation including number of vehicles.
- C. Qualification Data:
  - 1. Manufacturer's Certificates: Certify that hot mix asphalt products meet or exceed NYSDOT Standard Specifications:
    - a. Section 401: Plant Production
    - b. Section 402: Hot Mix Asphalt (HMA) Pavements
    - c. Section 407: Tack Coat
    - d. Section 685: Pavement Markings



#### 1.4 QUALITY ASSURANCE

- A. Manufacturer and Mixing Plant Qualifications: A paving-mix manufacturer and mixing plant with NYSDOT approved materials and batch plant equipment complying with the following NYSDOT Standard Specifications:
  - 1. Section 401: Plant Production
  - 2. Section 402: Hot Mix Asphalt (HMA) Pavements.
- B. Asphalt Paving Installer: Company specializing in performing work described in this section with minimum experience of three years.
- C. Permits: Submit certified copies of all permits obtained from local regulatory agencies and New York State Department of Transportation.
- D. Installation Requirements: Work to be performed in accordance with the following NYSDOT Standard Specifications:
  - 1. Section 402: Hot Mix Asphalt (HMA) Pavements
  - 2. Section 407: Tack Coat
  - 3. Section 685: Epoxy Reflectorized Pavement Markings
- E. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
  - 2. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
  - 3. Review condition of subgrade and preparatory work.
  - 4. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
  - 5. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

#### 1.5 REGULATORY REQUIREMENTS

- A. Obtain written permission and required permits from applicable agency prior to start of construction and submit copies of permits as specified in "Submittals - Quality Control Submittals" above.

#### 1.6 PROJECT CONDITIONS

- A. Temperature and Seasonal Limitations: Refer to NYSDOT 402-3.01 Temperature and Seasonal Limitations.
  - 1. Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, if the temperature has not been above 35 deg for 12 hours immediately prior to application or if the following minimum surface temperatures are not met.



2. Minimum Surface Temperatures: Comply with NYSDOT Standard Specifications Section 402, table 402-1 – Temperature Requirements.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature in accordance with NYSDOT Standard Specifications Section 685-3.02 – Atmospheric Conditions.

## PART 2 - PRODUCTS

### 2.1 AGGREGATE SUBBASE AND BASE FOR ASPHALT PAVING

- A. Refer to Division 31 Section "Earth Moving" for aggregate subbase and base courses and for aggregate pavement shoulders.

### 2.2 ASPHALT PAVING MIX AGGREGATES

- A. Aggregates for binder and top course: Conform to the requirements of NYSDOT Standard Specification 401-2.02, Aggregates.

### 2.3 ASPHALT MATERIALS

- A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes meeting NYSDOT Standard Specifications, Section 402 (70 Series) for each pavement course and complying with the following requirements:
  1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
  2. Mixes to be placed at thickness noted on the Drawings.
  3. Binder Course (2-in < t < 3-in): NYSDOT No. 402.197904 (Type 3 Binder). Maximum 20% RAP permitted.
  4. Binder Course (3-in < t < 5-in): NYSDOT No. 402.257904 (Type 3 Binder). Maximum 20% RAP permitted.
  5. Shim Course: NYSDOT No. 402.058904 (Type 5 Shim). Maximum 20% RAP permitted.
  6. Top Course: NYSDOT No. 402.127304 (Type 6.) Maximum 20% RAP permitted.
  7. Top Course: NYSDOT No. 402.097304 (Type 7.) Maximum 20% RAP permitted.
  8. Top Course: NYSDOT No. 402.097104 (Type 7F.) Maximum 20% RAP permitted.
- B. Coatings/Fillers: Comply with New York State Department of Transportation Standard Specification, Section 702 for material designations indicated.
  1. Tack Coat: Emulsified asphalt
    - a. Slow setting type; NYSDOT Designation 702-3601 (SS-1h) or 702-4501 (CSS-1h).
    - b. Medium setting type; NYSDOT Designation 702-3401 (HFMS-2H) or 702-4301 (CMS-2h)



2. Asphalt Cement Filler: NYSDOT Designation 702-0700.

C. Water: Potable.

## 2.4 PAVEMENT MARKING PAINT

A. Complying with NYSDOT Standard Specifications:

1. Section 727-09: White and Yellow Solvent Borne Acrylic Permanent Traffic Paint

2. Colors:

a. White for asphalt striping and signage

- 1) Lane Markings for traffic in the same direction

b. Yellow for traffic markings

- 1) No parking parent / bus drop-off zones
- 2) No parking fire lanes
- 3) Lane Markings for opposing traffic
- 4) Parking Stalls – Confirm with owner

c. Blue for the following locations:

- 1) ADA Accessible symbol and associated ADA Accessible striping

3. 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. TM 5626 White Setfast Acrylic Traffic Marking Paint, Sherwin Williams Company, Baltimore, MD
- b. TM 5627 Yellow Setfast Acrylic Traffic Marking Paint, Sherwin Williams Company, Baltimore, MD
- c. TM 2133 Blue Setfast Latex Traffic Marking Paint, Sherwin Williams Company, Baltimore, MD

B. Pavement Striping Blackout Paint: Opaque, high quality, exterior grade primer compatible with existing asphalt surface and pavement marking paint.

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. TM 5629 Black Setfast Acrylic Traffic Marking Paint, Sherwin Williams Company, Baltimore, MD

C. Complying with NYSDOT Standard Specifications:

1. Section 727-03: Epoxy Pavement Marking Coating Material



2. Colors:
  - a. White for asphalt striping and signage
    - 1) Lane Markings for traffic in the same direction
  - b. Yellow for traffic markings
    - 1) No parking parent / bus drop-off zones
    - 2) No parking fire lanes
    - 3) Lane Markings for opposing traffic
    - 4) Parking Stalls – Confirm with owner
  - c. Lane Markings for opposing traffic Blue for the following locations:
    - 1) ADA accessible symbol and associated ADA accessible striping
3. 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. EpoPlex “LS 50 White”, two-component, 100% solids epoxy highway marking coating material, EpoPlex, Maple Shade, NJ 08052
  - b. EpoPlex “LS 50 Yellow”, two-component, 100% solids epoxy highway marking coating material, EpoPlex, Maple Shade, NJ 08052
  - c. EpoPlex “LS 50 Custom Color (ADA Blue)”, two-component, 100% solids epoxy highway marking coating material, EpoPlex, Maple Shade, NJ 08052
- D. Pavement Striping Blackout Paint: Opaque, high quality, exterior grade primer compatible with existing asphalt surface and pavement marking paint.
  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. TM 5629 Black Setfast Acrylic Traffic Marking Paint, Sherwin Williams Company, Baltimore, MD
    - b. 3M Co., St. Paul, MN [www.3m.com](http://www.3m.com) (888-364-3577)
- E. Complying with NYSDOT Standard Specifications:
  1. Section 727-09: White and Yellow Acrylic Waterborne Permanent Traffic Paint
  2. Colors:
    - a. White for asphalt striping and signage
      - 1) Lane Markings for traffic in the same direction
    - b. Yellow for traffic markings
      - 1) No parking parent / bus drop-off zones



- 2) No parking fire lanes
  - 3) Lane Markings for opposing traffic
  - 4) Parking Stalls – Confirm with owner
- c. Blue for the following locations:
  - 1) ADA Accessible symbol and associated ADA Accessible striping
3. 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. TM 226 White Setfast Acrylic Waterborne Traffic Paint, Sherwin Williams Company, Baltimore, MD
  - b. TM 227 Yellow Setfast Acrylic Waterborne Traffic Paint, Sherwin Williams Company, Baltimore, MD

## 2.5 AUXILIARY MATERIALS

- A. Soil Stabilization Fabric: Refer to Section 31 20 00 "Earth Moving".

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to begin paving.
- B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
  1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
  2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
  3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
    - a. Subsurface preparation shall conform to the appropriate section of NYSS.
  4. After rolling, test course with straight edge min. 15 ft. long. Satisfactorily eliminate any depression over 1/4" deep.
  5. Proceed with paving only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.
- D. Beginning installation constitutes Contractor's acceptance of substrates and conditions.



### 3.2 SAWCUTTING

- A. Saw cut existing pavement perpendicular to the roadway surface in neat lines. If the pavement breaks irregularly along the cut line during removal, saw cut the entire length of pavement again to achieve one uniform, straight, and neat line.

### 3.3 TACK COAT

- A. Apply in accordance with NYSDOT Standard Specifications Section 407-3.02.
  - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- B. Manhole and Catch Basin Frames and Grates:
  - 1. Coat surfaces of frames and grates with oil to prevent asphalt adherence to surfaces. Do not tack coat.

### 3.4 PATCHING

- A. Hot-Mix Asphalt Pavement:
  - 1. Preparation: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending the minimum distance shown on Drawings into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade. Apply tack coat.
  - 2. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.
  - 3. Use hot-applied joint sealant to seal new joints. Fill flush with surface of existing pavement and remove excess.

### 3.5 REPAIRS

- A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
  - 1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.
- B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
  - 1. Clean cracks and joints in existing hot-mix asphalt pavement.
  - 2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.



3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

### 3.6 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
  1. Herbicide Application: Obtain approval of Owner before herbicide notification or application. Notify Owner's designated pesticide representative and all property neighbors not less than 48 hours in advance of any pesticide application including all herbicides, insecticides and fungicides in accordance with the School Pesticide Neighbor Notification Law, Section 409-h of New York State Education Law and Commissioner's Regulation 155.24.
- C. Tack Coat: Apply tack coat.

### 3.7 HOT-MIX ASPHALT PLACING

- A. Hot-Mix Asphalt Paving Application: Provide finished surface free from depressions that could collect water. Satisfactorily remove, at Contractor's expense, any depressions over 1/8" when tested with 6-foot straight edge without evidence of patching. Carry all paving to wood stripping, curbing or to location shown on Drawings.
- B. Application Over Aggregate Base:
  1. Heavy Duty, Auto Duty and Light Duty Asphalt Areas: Apply over aggregate base in 2 courses. Comply with New York State Department of Transportation Standard Specification, Section 401 and Section 402, for asphalt types specified.
- C. Placement: Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
  1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
  2. Spread mix at minimum temperature of 250 deg F.
  3. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
  4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.



- D. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
  - 1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.
- E. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

### 3.8 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
  - 1. Clean contact surfaces and apply tack coat to joints.
  - 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
  - 3. Offset transverse joints, in successive courses, a minimum of 24 inches.
  - 4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
  - 5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
  - 6. Compact asphalt at joints to a density within 2 percent of specified course density.
  - 7. Use hot-applied joint sealant to seal new joints. Fill flush with surface of existing pavement and remove excess.

### 3.9 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
  - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.



- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent or greater than 100 percent.
  - 2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### 3.10 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. Base Course: Plus 1/2 inch, no minus.
  - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1. Base Course: 1/4 inch.
  - 2. Surface Course: 1/8 inch.
  - 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
- C. Pavement Surface Drainage: Pavement is to drain to catch basin, swale or other storm drainage control measure as indicated on Drawings or, if not indicated on drawings, to nearest storm drainage control measure.
- D. Pavement Remediation: If pavement surface smoothness and drainage requirements above are not met, correct to meet tolerance and performance requirements. If remediation is not acceptable to Architect, removal and replacement of area will be required. Feather and smooth edges of correction measure so that joint is invisible.



### 3.11 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Perform work in accordance with NYSDOT Standard Specifications Section 727-09.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Surface must be clean, dry and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.
- E. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended application conditions (temperature, dew point, humidity) and rates to provide a minimum wet film thickness of 15 mils and minimum dry film thickness of 7.5 mils.
- F. Do not apply pavement marking paint to concrete surfaces with concrete sealers or efflorescence. Remove by extended weathering, etching, or abrasive blasting.

### 3.12 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. Replace and compact hot-mix asphalt where core tests were taken.
- E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

### 3.13 FLOOD TESTING

- A. Flood Tests: Perform flood test in the presence of the Architect using water tank truck to confirm that pavement surface smoothness and surface storm drainage requirements are met.

### 3.14 CLEANING AND DISPOSAL

- A. Paver and Equipment Cleaning:
  - 1. Do not clean tools and equipment used for HMA placement on the pavement surface, or near streams, ponds, drainage structures or other areas that are tributaries to waterways.
  - 2. Use an area approved by the Owner's Representative for cleaning all paving equipment and tools.
    - a. If possible, remove solid pieces of asphalt by scraping or other mechanical means prior to application of a cleaning agent.



3. If a petroleum product is used for cleaning, contain all liquid products during cleaning operations using tarpaulins, sand pads, pails, or other collection methods to prevent spillage or accidental release.
    - a. Use hand sprayers or other similar devices to minimize the amount of petroleum product applied.
  4. Properly dispose of sand and collected petroleum products as petroleum contaminated soil at no additional cost to the Owner.
- B. Remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

END OF SECTION 32 12 16



## **SECTION 32 13 13 - CONCRETE PAVING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Sidewalks.
  - 2. Curbs and gutters.
  - 3. Joint Sealant.
  - 4. Concrete Sealer.
  - 5. Curing materials.
  - 6. Joint forming materials.
  - 7. Joint Filler.
  - 8. Sealers

#### **1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals and informational submittals required by this Section concurrently.
- B. Refer to Div 03 concrete section for concrete submittal requirements, material certificates, installer qualification data and other required action and informational submittals.

#### **1.4 ACTION SUBMITTALS**

- A. Provide Product Data and Testing Information for each type of product indicated.
  - 1. Forms
  - 2. Form release agent
  - 3. Sealer
  - 4. Joint Sealant
  - 5. Curing Compound
  - 6. Expansion Joint Material
  - 7. Expansion Joint Forming System

#### **1.5 SHOP DRAWINGS**

- A. Jointing Plan: Provide shop drawing showing concrete joint layout, specifically indicating the locations of expansion, tooled and control joints.



## 1.6 QUALITY ASSURANCE

- A. For Installer and Manufacturer requirements, refer to Div 03 concrete section.
- 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. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship in the location and of the size indicated where directed by Architect and not less than 96 inches by 96 inches.
  - 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. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## 1.7 PREINSTALLATION MEETING

- A. Concrete Paving 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 architectural concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Cast-in-place architectural concrete subcontractor.
  - 2. Review concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction joints, forms and form-removal limitations, reinforcement accessory installation, concrete repair procedures, and protection of cast-in-place architectural concrete.

## 1.8 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.



## PART 2 - PRODUCTS

2.1 Refer to Div 03 concrete section for products, unless noted below.

### 2.2 FORMS

- A. Form Materials: Metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
  - 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

### 2.3 CONCRETE MATERIALS

- A. Refer to Div 03 concrete section for cementitious material, aggregates, admixtures, and other concrete materials.

### 2.4 FIBER REINFORCEMENT

- A. Refer to Div 03 concrete section for fiber reinforcement materials.

### 2.5 CURING MATERIALS

- A. Standard Concrete Curing Compound: Clear, Waterborne, Membrane-Forming Curing Compound in accordance with ASTM C 309, Type 1-D, Class B, dissipating, with fugitive dye. Minimum 2-coats required.

### 2.6 SEALER

- A. Standard Concrete Sealer: Penetrating, Silane Sealer: Single component, 40% silane, waterbased slab sealer that forms chemical bond to the concrete. VOC compliant.
  - 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; MasterProtect H 400.
    - b. Chem Masters; Aquanil Plus 40.
    - c. Dayton Superior Corporation; Weather Worker 40% J29WB.



## 2.7 JOINT SEALANT

- A. Joint Sealant: Two-part, elastomeric polyurethane or polysulfide-based pourable self-leveling joint sealant complying with ASTM C 920, Type M, Grade P, Class 25, NT and CRD-C-506, Type 1, Classes A & B.
  - 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 Building Systems; Sonolastic SL 2.
      - 1) Color for uncolored concrete: Limestone.
    - b. W.R. Meadows, Inc.; Deck-O-Seal Sealant.
      - 1) Color for uncolored concrete: Stone Gray.

## 2.8 EXPANSION JOINT MATERIALS

- A. Expansion/Isolation-Joint-Filler Strips: ½-inch rigid, extruded polystyrene insulation (at exterior walls) ASTM D 1751; asphalt-saturated cellulosic fiber, or ASTM D 1752.
- B. Plastic Expansion Joint Forming System (“Zip-Strip”): Plastic joint form plus cap.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following: (inserted space)
    - a. W.R. Meadows, Inc.; Snap-Cap.

## 2.9 CONCRETE MIXTURES

- A. Refer to Div 03 concrete section for concrete mixtures.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving in accordance with Section 31 20 00 “Earth Moving”. Identify soft pockets and areas of excess yielding.
  - 1. Completely proof-roll subbase in one direction and repeat in perpendicular direction.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
- D. Beginning installation constitutes Contractor’s acceptance of substrates and conditions.



### 3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

### 3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

### 3.4 STEEL REINFORCEMENT

- A. Refer to Div 03 concrete section for steel reinforcement.

### 3.5 JOINTS

- A. General: Form construction, expansion/isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
  - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
  - 1. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
  - 2. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Expansion / Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
  - 1. Locate expansion joints at intervals of 30 feet maximum unless otherwise indicated.
  - 2. Extend joint fillers full width and depth of joint.
  - 3. Plastic Expansion Joint Forming System ("Zip Strip"). Install so that cap of channel is flush with surrounding concrete pavement. Install per manufacturer's installation instructions. Remove plastic cap after concrete is cured.



4. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
  5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
- D. Control / Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving unless otherwise noted:
1. Tooled / Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.
    - a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.
  2. Tooled / Grooved and Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks. Sawed joints without tooling are not allowed.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

### 3.6 CONCRETE PLACEMENT

- A. Refer to Div 03 concrete section for concrete placement information.
- B. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- C. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- D. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- E. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- F. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, (4.3.2.1 Slump Adjustment).
  1. With each concrete mixture submittal, indicate amounts of mixing water to be withheld for later addition at Project site.



2. Water added must not increase the water-cement ratio past the approved mix design ratio.
  3. Add additional water reducer or plasticizer to mix instead of adding water to achieve flowable, workable concrete. Do not add water to concrete after adding these admixtures to mixture.
  4. Do not add water after truck is more than half empty.
- G. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- H. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.
- I. Screed paving surface with a straightedge and strike off.
- J. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- K. Machine-Placed Curbs and Gutters: Allowed only upon Architect approval. Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.
- L. Slip-Form Paving: Allowed only upon Architect approval. Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.
- M. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
1. When average high and low temperature is expected to fall below 40 deg F 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.



N. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

### 3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

### 3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 and 305R for hot-weather protection during curing.
- B. Slabs: Protect slabs within building from precipitation accumulation. Immediately remove water, snow or ice from surface of slabs within building regardless if source is from precipitation, construction activities, etc.
- C. 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 before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Formed Surfaces: Cure formed concrete surfaces, including supported slabs, and other similar surfaces. 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.
- E. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.



F. Cure concrete according to ACI 308.1:

1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.9 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow concrete paving to cure for a minimum of 28 days and be dry before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

3.10 FIELD QUALITY CONTROL

- A. Refer to Div 03 concrete section for field quality control information.
  1. Contractor Requirements:
    - a. Provide access to concrete construction for representatives of testing agency employed by Owner to perform concrete testing.
    - b. Notify Architect at least four days in advance of each concrete placement to allow notification of Owner's testing agency.

3.11 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 32 13 13



**SECTION 32 92 00 - TURF AND GRASSES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Section Includes:
  - 1. Seeding.
  - 2. Turf planting soil.
  - 3. Turf planting soil amendments and fertilizers.
  - 4. Turf renovation.
  - 5. Turf
  - 6. Turf maintenance.

**1.3 SUBMITTALS, GENERAL**

- A. General: Submit all action submittals and informational submittals required by this Section concurrently.

**1.4 ACTION SUBMITTALS**

- A. Product Data: For each type of product indicated, including:
  - 1. Seed.
  - 2. Fertilizer.
  - 3. Compost.
  - 4. Imported Topsoil.
- B. Warranty: Sample of special warranty.

**1.5 INFORMATIONAL SUBMITTALS**

- A. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- B. Qualification Data: For qualified landscape Installer.
- C. Product Certificates: For soil amendments and fertilizers, from manufacturer.



D. Material Test Reports:

1. Imported Topsoil: Before delivery, submit written statement giving location of properties from which topsoil is to be obtained, names and addresses of property owners, analysis of topsoil, depth to be stripped, and any crops grown during the previous 5 years.
2. Compost: Before delivery, submit a recent US Composting Seal of Testing Assurance Program data sheet.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.
- B. Warranty: Executed special warranty.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.
  1. Turf Installer: Engage an experienced turf installation firm to perform work of this Section that has installed at least seven (7) acceptable projects of the type specified within past 5 years. Provide location and reference contacts for each of the submitted projects.
  2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor with certifications outlined below on Project site when work is in progress.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; available nutrients; deleterious material; pH and recommendations to obtain optimal pH factor; mineral and plant-nutrient content of the soil; map with locations where each sample was collected; date, time and weather when samples were collected; and name of person who collected the samples.
  1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
  2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.



3. Report suitability of tested soil for turf growth.
  - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1,000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
  - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Bulk Materials:
  1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

#### 1.9 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
  1. Spring Planting: March 15 to May 15.
  2. Fall Planting: August 15 to September 15.
- B. Hydroseeding Restrictions: Do not hydroseed without prior written permission of the Architect.
- C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.



#### 1.10 SEQUENCING AND REVIEW

- A. Notify Architect no fewer than 48 hours in advance of proposed seeding and sodding to allow review of topsoil finish grading.
- B. Do not proceed with seeding and sodding without Architect's written permission.
  - 1. Architect's written permission does not alleviate Contractor from conforming to the required grades indicated on Drawings.

#### 1.11 MAINTENANCE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, as determined by the Architect, but for not less than the following periods:
  - 1. Seeded and Sodded Turf: Three (3) documented mowings.
    - a. Document mowings in writing via fax or email to Owner and Architect on the day each mowing is performed. Failure of notification may subject Contractor to further mowings at no additional cost to Owner.
  - 2. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
- B. Water: Provide all water required to properly irrigate temporary, permanent, and renovated turf areas. Include all facilities including, but not limited to, hoses, sprinklers, water cannons and reels, as long as it takes to establish and maintain turf. When adequate water supply or pressure is not available, supply water from offsite, including trucking.

#### 1.12 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace turf that fails in materials, workmanship, or growth within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
  - 2. Warranty Period:
    - a. Turf: 12 months, after acceptable turf is established, as determined by the Architect.



3. Include the following remedial actions as a minimum:
  - a. Immediately remove dead turf and replace unless required to plant in the succeeding planting season.
  - b. Replace with seed or sod as originally specified.
- B. Provide extended warranty for period equal to original warranty period, for replaced turf material.

## PART 2 - PRODUCTS

### 2.1 SEED

- A. Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Blends: Seed blend with not less than 95 percent germination, not less than 85 percent live seed, and not more than 0.5 percent weed seed.
  1. If premixed blend, follow manufacturer's recommended maximum seeding rate unless otherwise noted.
- C. Lawn Seed:
  1. Varieties: Premier varieties of Kentucky bluegrass, perennial ryegrass, tall fescue and fine fescue with a mean ranking of 6.0 or higher on the National Turfgrass Evaluation Program (NTEP) current list of tested varieties for the Northeast United States.
- D. Seed Blends: Seed of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:
  1. General Lawn Mixture-Tall Fescue/Kentucky Bluegrass Blend: Proportioned by weight as follows:
    - a. 85 percent tall fescue (*Festuca arundinacea*).
    - b. 15 percent Kentucky bluegrass (*Poa pratensis*).
  2. General Lawn Sun/Shade Mixture: Proportioned by weight as follows:
    - a. 75 percent 1/3 equal mixture of three Kentucky bluegrass (*Poa pratensis*) varieties.
    - b. 25 percent fine fescue (*Festuca rubra*).

### 2.2 INORGANIC SOIL AMENDMENTS

- A. Perlite: Horticultural perlite, soil amendment grade.
- B. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- C. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.



## 2.3 ORGANIC COMPOST

- A. Compost: Organic product manufactured through the controlled aerobic, biological decomposition of biodegradable materials which involves mesophilic and thermophilic temperatures to reduce weed seeds and stabilize carbon content. Manufacturing facility is to be registered and/or permitted by New York State Department of Environmental Conservation and is to comply with their requirements.
- B. Compost requirements:

Parameters	Units of Measure	Range	Analysis Method
pH	pH units	5.8-7.8	TMECC 04.11-A
Soluble Salts Concentration (electrical conductivity)	dS/m (mmhos/cm)	Maximum 6	TMECC 04.10-A
Moisture Content	%, wet weight basis	20-50	TMECC 03.09-A
Organic Matter Content	%, dry weight basis	Minimum 60	TMECC 05.07-A
Particle Size	% passing a selected mesh size, dry weight basis	97-100% Passing 3/8"	TMECC 02.02-B or ASTM D 2977
C:N Ratio	Ratio, dry weight basis	5:1 – 30:1	TMECC 05.02-A
Physical Contaminants (man-made inerts)	%, dry weight basis	<.50	TMECC 03.08

- C. Mix with existing and imported topsoils in ratio designated in “Turf Planting Soil” Article below. Compost must be provided for both existing and imported topsoil, with the exception of topsoil with 10% of organic content and above.
- D. Compost testing is to be in accordance with the US Composting Seal of Testing Assurance Program.
- E. Basis-of-Design Product: Subject to compliance with requirements, provide one of the following or a comparable product:
1. Naturcycle Compost, Naturcycle LLC
  2. WeCare Compost, WeCare Organics
  3. Sustane Concentrated Compost 2-6-3, Sustane Natural Fertilizer, Inc.
  4. Agresource, Inc. - Agresoil Compost

## 2.4 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.



- B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition, unless otherwise indicated:
1. Spring Fertilization: 10 percent nitrogen, 6 percent available phosphorous, and 4 percent water-soluble potash (10-6-4).
  2. Fall Fertilization: 5 percent nitrogen, 10 percent available phosphorous, and 5 percent water-soluble potash (5-10-5).
  3. Final Fertilization:
    - a. Spring: Granular slow release fertilizer with high nitrogen (38 percent), Uramite or other Architect-approved material.
    - b. Fall: "Fall Fertilization" composition above.
  4. Follow requirements regarding fertilization recommended in soil reports from a qualified soil-testing laboratory.

## 2.5 TURF PLANTING SOILS

- A. General: Provide turf planting soil consisting of existing and/or imported topsoil with amendments and fertilizers noted in this Section. Unamended existing or imported topsoil is not acceptable as turf planting soil.
1. Where quantities of existing topsoil are insufficient to provide 6 inch depth turf planting soil, supplement with imported topsoil, at no additional cost to Owner.
- B. Topsoil Requirements: Free of subsoil, stones 1 inch or larger in any dimension, dense material, hardpan, slag, clay, cinders, sod, roots, sticks, poison ivy, crabgrass, cough grass, noxious weeds, and foreign matter, including but not limited to glass, screws, asbestos, toxins, hazardous wastes, petroleum product contamination, lead and chemicals (such as atrizene and muriatic acid) that may be injurious to humans, animals and plant materials.
1. Mechanically screen topsoil to conform to following gradations:
 

<u>Sieve Designation</u>	<u>Percent Passing</u>
1 inch.....	100
1/4 inch.....	97-100
#200.....	20-65 of the 1/4-inch sieve
  2. No more than 60 percent of material passing #100 mesh shall consist of clay as determined by Bouyoucous hydrometer or by decantation method.
  3. Topsoil to comply with the following:
    - a. Organic Matter Content: Not more than 10 percent.
    - b. Corrected to pH Value: 6.5 to 7.5 on that portion passing 1/4-inch sieve.
    - c. Soluble Salt Content: Not to exceed 500 parts per million.



- C. Existing Topsoil: Existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation process and stockpiled on-site. Verify suitability of native surface topsoil to produce viable planting soil.
1. Provide soil analysis per requirements in Part 1 of this Section.
- D. Imported Topsoil: Imported topsoil obtained from local sources or from areas having similar soil characteristics as Project site. Obtain topsoil displaced from naturally well-drained sites where topsoil occurs at least 6 inches deep; do not obtain from agricultural land, bogs or marshes.
1. Additional Properties of Imported Topsoil or Manufactured Topsoil: Screened and free of stones 1 inch or larger in any dimension; free of roots, plants, sod, clods, clay lumps, pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; free of obnoxious weeds and invasive plants including quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and brome grass; not infested with nematodes, grubs, other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and with sufficient structure to give good tilth and aeration. Continuous, air-filled, pore-space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.
  2. Provide soil analysis per requirements in Part 1 of this Section.
- E. Required Amendments: Mix existing and imported topsoil with the following soil amendments in the following quantities to produce planting soil:
1. Organic Compost:
    - a. Ratio of Loose Compost to Blended Topsoil: For bidding purposes, provide 1 part compost to 5 parts blended topsoil, or in quantity great enough to achieve 8% organics based on top soil testing report
    - b. Regardless of topsoil organic content, add organic compost to all turf planting soils, including topsoils placed on slopes and in stormwater basins, swales and biofiltration areas.
  2. pH Adjustment: Apply approved calcium or sulfur compounds to correct pH level to be between 6.5 and 7.5 or as recommended by soil analysis report.
  3. Soil Analysis Recommendations: Provide nutritional and other amendments recommended in the soil analysis report, as approved by Architect.
  4. Provide fertilizer per "Fertilizer" Article above.



## 2.6 TOPDRESSING SAND

- A. Provide processed sand tested to meet the following requirements per ASTM-F-1632.
- B. Processed Sand: The sand shall meet the following particle size criteria:

	Sieve Mesh	Diameter of Sieve (mm)	Allowable Range % retained
Coarse Gravel	5	4.00	0%
Fine Gravel	10	2.00	0-5%
Very Coarse Sand	18	1.00	0-20% combined with gravel
Coarse	35	0.50	20-50%
Medium	60	0.25	20-40%
Fine	100	0.15	20% maximum
Very Fine	270	0.075	5% maximum
Silt & Clay			3% maximum

- 1. Sand is to have a coefficient of uniformity not exceeding 3.5 (D60/D10).
- 2. Maximum of 5% combined very fine sand, silt and clay allowable.
- 3. Minimum of 60% in the medium and coarse size fractions required.

## 2.7 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
  - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.



2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
  3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
  4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.
- D. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

### 3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
- C. Bulk-mix screened topsoil, soil amendments, organic compost and fertilizer, and thoroughly blend planting soil.
1. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
  2. If soil testing recommendations do not provide fertilizer application quantities, provide application rate of 1 lb. of nitrogen per 1,000 square feet.
  3. If liming is required, mix lime with dry soil before mixing fertilizer.
- D. If topsoil is to remain in place, thoroughly incorporate the additives into the top 6 inches of topsoil.
- E. Spread planting soil to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
1. Spread approximately 1/3 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.



2. Reduce elevation of planting soil to allow for soil thickness of sod.
- F. Unchanged Subgrades: If topsoil is to remain in place, prepare surface soil as follows:
1. Cut neat line between existing turf to remain and new turf.
  2. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
  3. Loosen surface soil to a depth of at least 6 inches. Uniformly apply the soil amendments, organic compost and fertilizer over the entire area using a compost spreader or similar equipment that will achieve a uniform application, according to planting soil mix proportions and mix thoroughly into top 5 inches of soil. Till soil to a homogeneous mixture of fine texture.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
  4. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
  5. Legally dispose of waste material, including grass, vegetation, and turf.
- G. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- H. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- I. Before planting, obtain Architect's written permission; restore planting areas if topsoil finish grading is eroded or otherwise disturbed after finish grading.

### 3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Erosion Control Matting: Install amended topsoil and seed before erosion control matting is installed. Follow manufacturer's installation recommendations.
- B. Turf reinforcement matting: Install planting soil in two lifts. First lift is installed before the matting is placed. Second lift is placed after the matting is installed by filling the cells of the matting with planting soil. Lightly compact soil before seeding. Follow manufacturer's installation recommendations.

### 3.5 SEEDING

- A. Timing: Provide seeding within planting times indicated.
  1. Seed at earliest possible date to achieve mature turf prior to Owner occupancy.
  2. Sow Tall Fescue varieties preferably in fall.



- B. Sow seed with Brillion spreader or similar seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in three passes: second pass at 90 degrees to the first, third pass at 45 degrees to second.
  - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
  - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- C. Sow seed at a total rate of 6 lb/1,000 sq. ft.
- D. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- E. Protect seeded areas with slopes not exceeding 1:4 as follows:
  - 1. In small areas adjacent to buildings, at parking islands and narrow strips of seeding along paving, spread straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment. Avoid areas of thick mulch that will prevent seed determination.
  - 2. In larger areas, including athletic fields if approved by Architect, mulch by hydromulching.
- F. Water newly planted areas and keep moist until new turf is established.

### 3.6 EXISTING TURF RENOVATION / REPAIR – GENERAL (NON-ATHLETIC FIELD) AREAS

- A. Renovate existing turf indicated on Drawings, turf areas disturbed as part of Project, and areas damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles. Reestablish turf where settlement or washouts occur or where minor regrading is required and install new planting soil and turf as required below.
  - 1. In areas where turf has been removed, killed, damaged or contaminated:
    - a. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.
    - b. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.
    - c. Till stripped or bare areas thoroughly to a soil depth of 4 inches.
    - d. Install new planting soil to fill low spots and meet finish grades.
    - e. Apply soil amendments and initial fertilizers required for establishing new turf and mix thoroughly into top 4 inches of soil.
    - f. Apply seed and protect with straw mulch as required for new turf.



- g. Water newly planted areas and keep moist until new turf is established.
  - h. For other maintenance required, refer to Turf Maintenance section.
2. In areas where existing turf remains:
- a. Mow to height of 2-1/2".
  - b. Core aerate in two to three passes at a rate of nine holes minimum per square foot to a minimum depth of 4 inches, and rake existing turf.
  - c. Remove weeds.
  - d. Remove waste and foreign materials, loose vegetation, and legally dispose of them off Owner's property.
  - e. Drag to break up cores or remove them.
  - f. Topdress with fine topsoil and overseed if there is less than 90% healthy turf coverage.

### 3.7 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
  - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
  - 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
  - 3. Use hand weeding to control weeds. Schedule weedings throughout the year to maintain turf as free of weeds as possible.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
  - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
  - 2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
- C. Mow turf when new growth reaches 3.75-4.5 inches in height. Repeat mowing to maintain specified height once per week or as needed to ensure the maximum height does not exceed 4.5 inches between mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
  - 1. Mow turf to a height of 2-1/2 to 3 inches.
  - 2. Neatly trim edges and hand clip where necessary.
  - 3. Immediately after each mowing (same day), carefully remove excess clippings to prevent damage to turf.



- D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.

### 3.8 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
  - 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.
- C. Warranty period does not begin until satisfactory turf is established, as determined by the Architect.

### 3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 32 92 00



## **SECTION 33 11 13 – POTABLE WATER SUPPLY WELLS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. This Section includes the following:
  - 1. Pitless units
  - 2. Submersible well pumps.
  - 3. Chemical injection systems

#### **1.3 DEFINITIONS**

- A. ABS: Acrylonitrile-butadiene-styrene plastic.
- B. PA: Polyamide (nylon) plastic.
- C. PE: Polyethylene plastic.
- D. PP: Polypropylene plastic.
- E. PVC: Polyvinyl chloride plastic.

#### **1.4 ACTION SUBMITTALS**

- A. Product Data: Submit certified performance curves and rated capacities of selected well pumps and furnished specialties and accessories for each type and size of well pump indicated.
  - 1. Pitless units.
  - 2. Submersible pumps.
  - 3. Chemical injection system components.
  - 4. Domestic water control systems.

#### **1.5 INFORMATIONAL SUBMITTALS**

- A. Field quality-control reports, including the following:
  - 1. For each well, include the following:
    - a. Water levels.
    - b. Laboratory water analysis.
    - c. Performance test data.
  - 2. New York State Department of Environmental Conservation “Well Completion Report”



## 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each well pump to include in emergency, operation, and maintenance manuals.
  - 1. Project Record Documents: Record the following data for each water supply well:
    - a. Pumping Test: Static water level, maximum safe yield, and drawdown at maximum yield.

## 1.7 QUALITY ASSURANCE

- A. Testing agency qualifications: Certified by the EPA or State to analyze drinking water for compliance monitoring.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with AWWA A100 for water supply wells.

## 1.8 REGULATORY REQUIREMENTS

- A. Legal Solder Requirements: In accordance with the 1986 Amendments to the Safe Drinking Water Act, it is hereby stipulated that pipe and pipe fittings which are utilized to convey potable water shall contain no more than eight percent (8%) lead and that solder or flux utilized in such systems shall contain no more than two tenths of one percent (0.2%) lead.

## 1.9 FIELD CONDITIONS

- A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated.
  - 1. Notify Owner no fewer than seven days in advance of proposed interruption of water service.
  - 2. Do not proceed with interruption of water service without Owners written permission.

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.



B. Comply with the following standards for water supply wells:

1. NYCRR Part 5, Appendix 5-D, "Special Requirements for Wells Serving Public Water Systems."
2. AWWA A100-15 "Water Wells."

2.2 COLUMN PIPE (DROP TUBE)

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. Cresline-West, Inc.
2. J-M Eagle Manufacturing Co.
3. North American Pipe Corp.

B. Description: ASTM D1785, Schedule 120, PVC pipe with threaded ends and Schedule 120 threaded bell ends. 304 Stainless steel female thread NPT x female thread NPT couplings may also be used.

2.3 SUBMERSIBLE WELL PUMPS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Grundfos; 60S50-7 or a comparable product by one of the following:

1. ITT Industries; Goulds Pumps.
2. McDonald, A. Y. Mfg. Co.
3. Pentair Pump Group; Myers, F. E.
4. Sta-Rite Industries, Inc.; Water Systems Group.
5. Sterling Fluid Systems (USA) Inc.; Peerless Pump.

B. Description: Submersible, vertical-turbine well pump complying with HI 2.1-2.2 and HI 2.3; with the following features:

1. Impeller Material: Stainless steel.
2. Motor: Capable of continuous operation under water, with protected submersible power cable.
3. Column Pipe: ASTM A 53/A 53M, Schedule 40, galvanized-steel pipe with threaded ends and cast-iron or steel threaded couplings.
4. Discharge Piping: ASTM D 2239, SDR Numbers 5.3, 7, or 9 PE pipe; made with PE compound number required to give pressure rating not less than 200 psig. Include NSF listing mark "NSF pw."
  - a. Insert Fittings for PE Pipe: ASTM D 2609 made of PA, PP, or PVC with serrated, male insert ends matching inside of pipe. Include bands or crimp rings.



C. Capacities and Characteristics:

1. Capacity: 13 gpm.
2. Discharge Head: 110 psig.
3. Discharge Size: 1.5 NPS.
4. Speed: 3450 rpm.
5. Motor Horsepower: 5.
6. Lift: 250 feet.
7. Pressure Rating: 150 psig.
8. Hertz: 60.

2.4 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 22 05 13 "Common Motor Requirements for Plumbing Equipment."

1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
2. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in electrical Sections.

2.5 PITLESS UNIT

A. Basis-of-Design Product: Subject to compliance with requirements, provide Monitor Division, Baker Manufacturing Company, LLC; Model 6 x 8 Pitless Unit or a comparable product by one of the following:

1. MAASS Midwest Manufacturing, Inc.
2. Merrill Manufacturing.

B. Factory-assembled equipment that includes the following components:

1. Well Cap:
  - a. Heavy duty gray cast iron, gasketed watertight cap painted with a green enamel finish, with separate protected downward facing stainless steel screened well vent with pipe nipple. The top of the cap can be removed without affecting the sealed conduit or wiring.
2. Upper Casing:
  - a. The Upper Casing is factory assembled to the discharge body, and the lift out and hold down mechanism is factory assembled to the spool. Upper casing thickness must conform to the Recommended Standards for Water Works, and be coated with a rust protective coating. The upper casing must provide a watertight connection from the discharge body to the well cap. The discharge port center line to be five feet below grade, and the pitless upper casing to extend eighteen inches above grade.



3. Spool

- a. The spool shall include 2 NPT per ANSI B 1.20.1 male or female drop pipe connection and shall be constructed of lead-free galvanized heavy duty gray cast iron, ductile iron, or steel with lead-free galvanized plating on the wetted surface of over .010 inches thick. The spool will have o-ring grooves machined into the spool retaining the o-rings when setting or pulling the system.
- b. The positive pressure o-ring seals shall be constructed of neoprene or equivalent. Spool shall be designed to accommodate probe tubes or water samplers and NPT ports for discharge pressure taps. O-ring protection should be provided to prevent the seals from dragging on the upper casing when the pump is installed or removed.

4. Discharge Body

- a. The Discharge Body shall be constructed of lead-free galvanized ductile iron or lead-free galvanized steel. O-ring seat to be designed to prevent crevice and galvanic corrosion, dissimilar metals should be avoided. Discharge body designed to be strong enough to prevent distortion due to vertical movement of discharge pipe thereby allowing spool to bind in the discharge body. Minimum I.D. of the discharge body to be equal to or greater than I.D. of the well casing for ease in well servicing.

5. Hold-Down Mechanism

- a. The Pitless Unit spool should have a hold down mechanism, factory assembled to spool and capable of preventing rotation of the pitless spool relative to the discharge body, at full rated locked rotor torque of the submersible pump motor. The spool must also have a factory assembled lift out pipe and bail, or spider capable of 300 lbs. rated load, to allow lifting a water filled drop pipe and pump out of the well for service. Components to be constructed of ductile iron or steel with a corrosion resistant coating.

6. Check Valves

- a. Provide low pressure drop, self-cleaning, swing type check valves, with elastomer seal at seat, and constructed of corrosion resistant materials.

## 2.6 CHEMICAL INJECTION SYSTEM

1. Basis-of-Design Products: Subject to compliance with requirements, provide products manufactured by Pulsafeeder; an IDEX Corporation or comparable products by one of the following:
  - a. Stenner Chemical
  - b. LMI, an Ingersoll Rand Business



2. In-Line Flow Meter: Pulsafeeder 2" series 10,000 cast brass flow meter with direct multijet high-speed impeller, flanged connections, hermetically sealed contactor, 5 gallons per revolution register and magnetically operated read switches to provide a contact closure proportional to system flow rate.
  - a. Supply with (2) two reed capsule assemblies; Pulsafeeder Part No. L9702300-000.
3. Chemical Feed Pumps: Pulsafeeder Model Pulsatron series E plus No. LPK5EA-VTC3-500, 60 gpd maximum, pumping against a maximum of 150 psig with external pacing control and the following features:
  - a. PVC pump head, bleed valve, injection valve assembly, foot valve assembly and five-function valve.
  - b. Teflon seat and ceramic ball check valve.
  - c. Polyethylene tubing.
  - d. Stainless steel wall mounting bracket: Pulsafeeder part No. L9902700-000.
4. Chemical Solution Tanks: Pulsafeeder Part No. 42406, double wall polyethylene rigid tank, 62 gallon capacity with graduations on side of tank, heavy-duty cover, draw assembly and eductor for periodic batch regeneration.
5. Suction Tube Shield Assemblies: Pulsafeeder Part No. 28655/7019 32" long 1" diameter PVC tube.
6. Chemical Injectors: Pulsafeeder Part No. J61135 (3/4") corporation stop and nozzle assembly to disperse solution into the centerline of pipe for even mixing. Provide saddleblock injection adapter for connection to waterline (refer to plan for pipe size).
7. Flow indicator: Pulsafeeder Part No. U7012309, NSF approved, acrylic body, 100 PSI rating with visual ball indicator.

## 2.7 DOMESTIC WATER CONTROL SYSTEM

- A. Liquid level sensors and controls shall be a custom electrode operated level control assembly with electrode holder, stainless steel electrodes, Nema 4X control panel, complete liquid level wiring, relays, switches, contactors and accessories similar to "ST"-series storage tank controls as manufactured by American Automated Controls, Elkwood, Virginia or equivalent.
- B. Electrode fitting shall have NEMA IV Terminal Housing, Red brass, 250 PSI rated fitting body, removable stainless-steel electrode connections.
- C. Control system to be complete and operable including the following and as described on the drawings:
  1. Control the domestic well pumps WP-1 (lead pump) and WP-2 (back up pump) operation by on and off electrode levels (Contractor to verify in field exact electrical characteristics). Include magnetic starter and H-O-A switch for pump on panel with operation light.



2. Provide low water cutoff signal for domestic water booster pump system with reset probe.
3. Provide two auxiliary contacts with operation lights.
4. Refer to drawings for length of electrodes and additional information of control wiring functions required.

D. Sequence of Operations:

1. Manual Operation:
  - a. Power primary or emergency well pump via H-O-A switch - Blue lamp illuminated. System is not designed to have both well pumps operating at the same time.
2. Automatic Operation:
  - a. Conductance Probe - "Water Level Full" - Green lamp illuminated.
    - 1) Well pump De-energized - Blue lamp off
  - b. Conductance Probe - "Water Level Low" - Yellow lamp illuminated.
    - 1) Energize well pump and solenoid fill valve - Blue lamp illuminated.
  - c. Conductance Probe - "Water Level Overflow" - Red lamp illuminated
    - 1) Annunciates local alarm with silencer button mounted on panel and provided with pair dry contacts for connection to Central Building Fire Alarm Panel by Prime Contractor responsible for Electric Work.
  - d. Conductance Probe - "Water Level Empty" - Red lamp illuminated
    - 1) Annunciates local alarm with silencer button mounted on panel and provided with pair dry contacts for connection to Central Building Fire Alarm Panel by Prime Contractor responsible for Electrical Prime Contract.
    - 2) Send signal to Control Panels for Domestic Water Booster Pumps SP-4/SP-5 and PP-6 to De-energize booster pumps until water level in tanks reach the "Reset Booster Pump" level.
  - e. Well Pump Selection: Provide alternator and time clock to run the back-up well as the primary well from 7am to 7pm every 10 days.

## 2.8 LABELING AND IDENTIFYING

- A. Detectable Warning Tape: Refer to Section 22 05 53 "Identification for Plumbing Piping and Equipment" for warning tape materials and basic installation requirements.



## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install submersible well pumps according to HI 2.4 and provide access for periodic maintenance.
  - 1. Before lowering permanent pump into well, start pump to verify correct rotation.
  - 2. Securely tighten discharge piping joints.
  - 3. Connect motor to submersible pump and locate near well bottom.
    - a. Connect power cable while connection points are dry and undamaged.
    - b. Do not damage power cable during installation; use cable clamps that do not have sharp edges.
    - c. Install water-sealed surface plate that will support pump and piping.

### 3.2 DOMESTIC WATER CONTROL SYSTEM INSTALLATION

- A. Install liquid-level sensor system on existing 3,000-gallon tank in the lower level of the well pump house. Install panel on the wall of the upper level of the well pump house where indicated.

### 3.3 CONNECTIONS

- A. Piping installation requirements are specified in Section 22 11 13 "Facility Water Distribution Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
  - 1. Connect piping between well pump and water piping.
- B. Connect wiring according to Division 26 specification sections.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Perform the following tests and inspections:
  - 1. Prepare reports on static level of ground water and level of water for various pumping rates.
  - 2. Performance Test Preparation: Start well pump and adjust controls and pressure setting. Replace damaged and malfunctioning controls and equipment.



3. Performance Testing: Conduct final pumping tests after pumps have been installed, cleaned, and tested.
  - a. Arrange to conduct tests, with seven days' advance notice, after test pump and auxiliary equipment have been installed. Note water-level elevations referred to for each assigned datum in wells.
  - b. Provide discharge piping to conduct water to locations where disposal will not create a nuisance or endanger adjacent property. Comply with requirements of authorities having jurisdiction.
  - c. Provide and maintain equipment of adequate size and type for measuring flow of water, such as weir box, orifice, or water meter.
  - d. Measure elevation to water level in wells.
  - e. Perform two bailer or air-ejection tests to determine expected yield. Test at depths with sufficient quantity of water to satisfy desired yields.
  - f. Test Pump: Variable capacity test pump with capacity equal to maximum expected yields at pressure equal to drawdown in wells, plus losses in pump columns and discharge pipes.
  - g. Start and adjust test pumps and equipment to required pumping rates.
  - h. Record readings of water levels in wells and pumping rates at 30-minute maximum intervals throughout 24-hour minimum period.
  - i. Record maximum yields when drawdown is 60 inches above top of suction screens after designated times.
  - j. Operate pumping units continuously for eight hours after maximum drawdown is reached.
  - k. Record returning water levels in wells and plot curves of well recovery rates.
  - l. Remove sand, stones, and other foreign materials that may become deposited in wells after completing final tests.

C. Prepare test and inspection reports.

### 3.5 CLEANING

- A. Disinfect water supply wells according to AWWA A100 and AWWA C654 before testing well pumps.



### 3.6 PROTECTION

- A. Water Quality Protection: Prevent well contamination, including undesirable physical and chemical characteristics.
- B. Provide casings, seals, sterilizing agents, and other materials to eliminate contamination; shut off contaminated water.
- C. Exercise care to prevent breakdown or collapse of strata overlaying that from which water is to be drawn.
- D. Protect water supply wells to prevent tampering and introducing foreign matter. Retain temporary well cap until installation is complete.

### 3.7 WATER ANALYSIS TESTING:

- A. Analyze water sample from each finished well for bacteriological, physical, and chemical quality and report the results. Collect samples and submit to a NYSDOH certified lab for biological testing showing samples negative for coliform bacteria.
- B. Submit lab results to Architect for review.

END OF SECTION 33 11 13