



SED NO. 13-02-00-01-0-004-021  
13-02-00-01-0-020-011

500 Bi-County Blvd, Suite 104  
Farmingdale, New York 11735  
631-847-7762

Farmingdale, New York

Albany, New York

Ithaca, New York

## BEACON CITY SCHOOL DISTRICT

BEACON, NEW YORK

PROJECT NO. 279180-22001

RECONSTRUCTION TO:  
ROMBOUT MIDDLE SCHOOL  
BEACON HIGH SCHOOL

December 21, 2021

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.

SET NO. \_\_\_\_\_

**BID**

---

**TABLE OF CONTENTS**

## PROJECT MANUAL

**BIDDING REQUIREMENTS AND CONDITIONS OF THE CONTRACT**

00 01 10	Table of Contents.....	
00 01 15	List of Drawing Sheets.....	
00 11 13	Notice to Bidders .....	
00 21 13	Instructions to Bidders (with 1 attachment).....	
00 41 00	Bid Form	
	Roof Work Contract RC-A1 (with 7 attachments) .....	
	Roof Work Contract RC-A2 (with 7 attachments) .....	
00 43 33	Proposed Products Form .....	
00 44 00	Bond Certification Form	
	General Conditions of the Contract for Construction (AIA Document A232-2019).....	
	Prevailing Wage Rate Information .....	PW200
	Miscellaneous Requirements .....	MR-1

**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**

<u>SECTION TITLE</u>	<u>SECTION TITLE</u>
<b><u>DIVISION 01 - GENERAL REQUIREMENTS</u></b>	01 42 00 References
01 10 00 Project Summary-Project Schedule	01 50 00 Temporary Facilities and Controls
01 21 00 Allowances (with one attachment)	01 60 00 Product Requirements
01 23 00 Alternates	01 73 00 Execution
01 25 00 Substitution Procedures (with one attachment)	01 77 00 Closeout Procedures
01 26 00 Contract Modification Procedures	01 78 23 Operation and Maintenance Data
01 29 00 Payment Procedures (with one attachment)	01 78 39 Project Record Documents
01 31 00 Project Management and Coordination (with two attachments)	01 79 00 Demonstration and Training
01 32 00 Construction Progress Documentation (with one attachment)	<b><u>DIVISION 02 – EXISTING CONDITIONS</u></b>
01 33 00 Submittal Procedures (with three attachments)	02 41 19 Selective Demolition
01 35 26 Governmental Safety Requirements	<b><u>DIVISION 04 - MASONRY</u></b>
01 40 00 Quality Requirements	04 20 00 Unit Masonry

**DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES**

06 10 26 Roofing Rough Carpentry

**DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

07 01 50.19 Preparation for Re-roofing

07 42 93 Wall and Soffit Panels

07 53 23 EPDM Roofing

07 71 00 Roof Specialties

07 72 00 Roof Accessories

07 92 00 Joint Sealants

**DIVISION 08 - OPENINGS**

08 41 13 Aluminum-Framed Entrances and Storefronts

08 71 00 Door Hardware

**DIVISION 09 - FINISHES**

09 91 00 Painting

09 96 00 High Performance Coatings

## LIST OF DRAWING SHEETS

**GENERAL INFORMATION**

G001 Title Sheet

G100 Symbols and Abbreviations

**ROMBOUT MIDDLE SCHOOL****CODE COMPLIANCE**

EG350 Code Compliance Review and First Floor Key Plan

EG351 Second Floor Key Plan

**ARCHITECTURAL**

EA050 Roof Key Plan

EA190 Roof Plan Area B

EA191 Roof Plan Area E

EA192 Roof Plan Area F

**BEACON HIGH SCHOOL****CODE COMPLIANCE**

FG350 Code Compliance Review and First Floor Key Plan

FG351 Second Floor Key Plan

**ARCHITECTURAL**

FA050 Roof Key Plan

FA190 Roof Plan Area A and G

**COMMON**

ZA190 Details

ZA191 Details

All drawings dated December 21, 2021.

**NOTICE TO BIDDERS**

NOTICE IS HEREBY GIVEN, that sealed Bids, in duplicate, are sought and requested by the Board of Education, Beacon City School District (hereinafter called "Owner"), for the Reconstruction to: Rombout Middle School and Beacon City High School.

**Separate** Bids are requested for a single Prime Contract for **Roof Work RC-A1 and Roof Work RC-A2** 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  
500 Bi-County Blvd, Suite 104  
Farmingdale, New York 11735

A **pre-bid conference** for potential Bidders and other interested parties will be held on Thursday, September 29, 2022, at 10:00 a.m., starting at Rombout Middle School and then moving on to Beacon High School.

Sealed Bids will be received by the Owner **until 2:00 p.m.** at the District Offices Conference Room as follows:

Bid Opening - **Roof Work RC-A1: Thursday, October 6, 2022**

Bid Opening - **Roof Work RC-A2: Thursday, October 13, 2022**

at which time and place Bids received will be publicly opened and read aloud.

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

Beacon City School District, 10 Education Drive, Beacon, NY 12508

[Tetra Tech Architects & Engineers](#), 500 Bi-County Blvd, Suite 104, Farmingdale, New York 11735

Complete digital sets of Bidding Documents, drawings and specifications, may be obtained online as a download at [www.tetratchaepplanroom.com](http://www.tetratchaepplanroom.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 [www.tetratchaepplanroom.com](http://www.tetratchaepplanroom.com) 'public projects'. Checks shall be made payable to **Beacon City 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 to all submitting bids. 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 [www.tetratchaepplanroom.com](http://www.tetratchaepplanroom.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 [www.tetratchaepplanroom.com](http://www.tetratchaepplanroom.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: Rombout Middle School and Beacon City High School.
  - a. Project Location:
    - 1) Rombout MS: 88 Matteawan Rd., Beacon, NY 12508.
    - 2) Beacon City HS: 101 Matteawan Rd., Beacon, NY 12508.
2. Owner: Beacon City School District.
  - a. Address: 10 Education Drive, Beacon, NY 12508.
3. Bid Opening: Bids will be received until the following Bid opening date and time, at the following location:
  - a. Bid Opening Dates and Times:
    - b. Roof Work RC-A1: 2:00 p.m. on Thursday, October 6, 2022.
    - c. Roof Work RC-A2: 2:00 p.m. on Thursday, October 13, 2022.
  - e. Bid Opening Location: District Offices Conference Room – 10 Beacon Drive, Beacon, NY 12508.
4. Bidders are invited to submit Bids for the following Prime Contracts:
  - a. Roof Work RC-A1: Rombout Middle School.
  - b. Roof Work RC-A2: Beacon High School.
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 9:00 a.m. until 2:00 p.m., except legal holidays.
  - a. Contact Construction Manager below, prior to visiting Project site, to arrange access.
    1. UW Marx, Inc. – Jeff West (518) 272-2541.
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: Thursday, September 29, 2022, at 10:00 a.m., local time.
  - b. Pre-Bid Conference Location: Meet at the Rombout Middle School building, address listed above. Afterwards will move on to the Beacon High School building, address listed above.
    - 1) Special Instructions: Contact Jeff West, Construction Manager at (518) 272-2541 with any questions.

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 **A201 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.
  - f. Attachment #6: Bidder’s Qualifications
  - g. Attachment #7: Insurance Certification
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. 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 7 attachments.
    - 4) Proposed Products Form.
    - 5) Bond Certification 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 [www.tetratchaeplanroom.com](http://www.tetratchaeplanroom.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”.

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. 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) Bond Certification 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 New York State, 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.
    1. In addition, the Surety shall be rated as equal to "A" or better as to "Policy Holder Ratings", and "VII" or better as to "Financial Size Category".
    2. Limitations: Bonding limits or bonding capacity refers to the limit or amount of bond on any one project.
  - 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 "Project Summary – Project Schedule".

Attachment: Pre-Bid Request for Interpretation Form

END OF SECTION 00 21 13



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

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

**Project No.: 279180-22001**

**Date:**

**Project Name: Reconstruction to: Rombout MS and Beacon City HS**

-----  
**Bidder Contact Person:**  
**Bidder Company Name:**  
**Bidder Phone:**  
**Bidder Email Address:**

-----  
**Question Pertains to:**

**Drawing Number:**  
**Plan Area:**  
**Room Number:**  
**Drawing Detail Number:**  
**Specification Section:**

-----  
**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.



500 Bi-County Blvd.  
Suite 104  
Farmingdale, New York 11743  
(631) 847-7762  
  
Farmingdale, New York  
Albany, New York  
Ithaca, 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: ROOF WORK RC-A1 – ROMBOUT MS**

**PROJECT TITLE:** RECONSTRUCTION TO:  
ROMBOUT MS AND BEACON CITY HS

**DATE:** December 21, 2021

**PROJECT NO.:** 279180-22001

**BID TO:** Beacon City School District

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.



**ALTERNATE NO. RC-A1-1: 30 YEAR TOTAL ROOF SYSTEM WARRANTY**

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

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

**OR**

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

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



**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
- Attachment #6 – Bidder’s Qualifications
- Attachment #7 – Insurance Certification

**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: \_\_\_\_\_

Federal Employer’s Identification Number: \_\_\_\_\_

**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.

---

---

---

---

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.

---

---

---

---

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 # 6**

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

**BIDDER'S QUALIFICATIONS FORM****THIS FORM MUST BE NOTARIZED AND SUBMITTED WITH THE BID**

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:



**BID FORM ATTACHMENT #7**

Beacon City School District  
10 Education Drive  
Beacon, NY, 12508

Roof Work Contract

**INSURANCE CERTIFICATION FORM**  
**THIS FORM MUST BE SUBMITTED WITH THE BID**

**Project Number: 279180-22001**    **Project Name: Roof Reconst. to: Rombout MS & Beacon City HS**

Your Insurance representative must complete the form below in order to be considered for the award of this Bid or Project, and it is important that you complete the Bidder's Acknowledgement section of this form (below).

Please note that a Standard Certificate of Insurance must accompany your Bid submission in order for your Bid to be considered.

**Insurance Representative's Acknowledgement:**

We have reviewed the insurance requirements set forth in the Bid and are capable of providing such insurance to our insured in accordance with such requirements in the event the Contract is awarded to our insured and provided our insured pays the appropriate premium.

Insurance Representative: \_\_\_\_\_

Address: \_\_\_\_\_

Are you an agent for the companies providing coverage? Yes \_\_\_\_\_ No \_\_\_\_\_

\_\_\_\_\_  
Insurance Representative

\_\_\_\_\_  
Date

**Bidder's Acknowledgement:**

I acknowledge that I have received the insurance requirements of this Bid and have considered the costs, if any, of procuring the required insurance and will be able to supply the insurance required in accordance with the Bid, if it is awarded. I understand that a Standard Certificate of Insurance must be submitted with my Bid; and if it is not, the Beacon City School District may reject my Bid and award to the next lowest Bidder.

Firm Name: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Bidder's Signature



500 Bi-County Blvd.  
Suite 104  
Farmingdale, New York 11743  
(631) 847-7762  
  
Farmingdale, New York  
Albany, New York  
Ithaca, 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: ROOF WORK RC-A2: BEACON HS**

**PROJECT TITLE:** RECONSTRUCTION TO:  
ROMBOUT MS AND BEACON CITY HS

**DATE:** December 21, 2021

**PROJECT NO.:** 279180-22001

**BID TO:** Beacon City School District

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.

---

---

**ALTERNATE NO. RC-A2-1: 30 YEAR TOTAL ROOF SYSTEM WARRANTY**

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

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

**OR**

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

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

---

---

**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
- Attachment #6 – Bidder’s Qualifications
- Attachment #7 – Insurance Certification

**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: \_\_\_\_\_

Federal Employer’s Identification Number: \_\_\_\_\_

**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.

---

---

---

---

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.

---

---

---

---

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 # 6**

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

**BIDDER'S QUALIFICATIONS FORM****THIS FORM MUST BE NOTARIZED AND SUBMITTED WITH THE BID**

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:



**BID FORM ATTACHMENT #7**

Beacon City School District  
10 Education Drive  
Beacon, NY, 12508

Roof Work Contract

**INSURANCE CERTIFICATION FORM**  
**THIS FORM MUST BE SUBMITTED WITH THE BID**

**Project Number: 279180-22001**    **Project Name: Roof Reconst. to: Rombout MS & Beacon City HS**

Your Insurance representative must complete the form below in order to be considered for the award of this Bid or Project, and it is important that you complete the Bidder's Acknowledgement section of this form (below).

Please note that a Standard Certificate of Insurance must accompany your Bid submission in order for your Bid to be considered.

**Insurance Representative's Acknowledgement:**

We have reviewed the insurance requirements set forth in the Bid and are capable of providing such insurance to our insured in accordance with such requirements in the event the Contract is awarded to our insured and provided our insured pays the appropriate premium.

Insurance Representative: \_\_\_\_\_

Address: \_\_\_\_\_

Are you an agent for the companies providing coverage? Yes \_\_\_\_\_ No \_\_\_\_\_

\_\_\_\_\_  
Insurance Representative

\_\_\_\_\_  
Date

**Bidder's Acknowledgement:**

I acknowledge that I have received the insurance requirements of this Bid and have considered the costs, if any, of procuring the required insurance and will be able to supply the insurance required in accordance with the Bid, if it is awarded. I understand that a Standard Certificate of Insurance must be submitted with my Bid; and if it is not, the Beacon City School District may reject my Bid and award to the next lowest Bidder.

Firm Name: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Bidder's Signature

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: \_\_\_\_\_

Beacon City School District  
10 Education Drive  
Beacon, NY,

Roof Work Contract

**BOND CERTIFICATION FORM**

**Project Number: 279180-22001** **Project Name: Beacon Project A Roof Reconstruction**

I acknowledge that I have reviewed the Performance Bond and Payment Bond requirements of this Bid and have considered the costs, if any, of procuring the required bonding and will be able to supply the bonds required in accordance with the Bid, if it is awarded.

I understand that this form must be submitted with my Bid; and if it is not, the Beacon City School District may reject my Bid and award to the next lowest Bidder.

Name of Bonding Company: \_\_\_\_\_

Address of Bonding  
Company: \_\_\_\_\_

Bidder's Firm Name: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Bidder's Signature

\_\_\_\_\_  
Print Name





# AIA<sup>®</sup> Document A232<sup>™</sup> – 2019

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

**for the following PROJECT:**

*(Name, and location or address)*

Reconstruction to  
Rombout Middle School  
Beacon High School  
Tt Project Number 279180-22001

SED #13-02-00-01-0-004-021  
SED #13-02-00-01-0-020-011

**THE CONSTRUCTION MANAGER:**

*(Name, legal status, and address)*

UW Marx, Inc.  
20 Gurley Avenue  
Troy, New York 12128

**THE OWNER:**

*(Name, legal status, and address)*

Beacon City School District  
10 Education Drive  
Beacon, New York 12508

**THE ARCHITECT:**

*(Name, legal status, and address)*

Tetra Tech Engineers, Architects & Landscape Architects, P.C.  
d/b/a Tetra Tech Architects & Engineers  
500 Bi-County Boulevard, Suite 104  
Farmingdale, New York 11735

**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<sup>™</sup>-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132<sup>™</sup>-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132<sup>™</sup>-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

Init.

## TABLE OF ARTICLES

- 1 GENERAL PROVISIONS
- 2 OWNER
- 3 CONTRACTOR
- 4 ARCHITECT AND CONSTRUCTION MANAGER
- 5 SUBCONTRACTORS
- 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 7 CHANGES IN THE WORK
- 8 TIME
- 9 PAYMENTS AND COMPLETION
- 10 PROTECTION OF PERSONS AND PROPERTY
- 11 INSURANCE AND BONDS
- 12 UNCOVERING AND CORRECTION OF WORK
- 13 MISCELLANEOUS PROVISIONS
- 14 TERMINATION OR SUSPENSION OF THE CONTRACT
- 15 CLAIMS AND DISPUTES

Init.

## 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 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.

§ 1.2.3.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- .1 Modifications, as defined in Section 1.1.1.
- .2 The Agreement.
- .3 Addenda, with those of later date having precedence over those of earlier date.
- .4 The General Conditions of the Contract for Construction.
- .5 Division 01 of the Specifications.
- .6 Drawings and remaining Divisions of the Specifications.

In the case of conflicts or discrepancies between Drawings and Divisions of the Specifications (other than Division 01), or within or among the Contract Documents and not clarified by Addendum, the Architect will determine which takes precedence in accordance with Sections 4.2.11, 4.2.12, and 4.2.13.

### § 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

Init.

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.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

#### § 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work, and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### § 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. 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 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 surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.6 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 three (3) 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 endeavor to forward all communications to the Contractor through the Construction Manager and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents.

### § 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

### § 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written 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 visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

**§ 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.

**§ 3.2.2.1** Do not scale Drawings. Follow figure dimensions, confirming on site.

**§ 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 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.

**§ 3.2.5** The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and 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.

**§ 3.3 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

Init.

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, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the 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 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 NOT USED**

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

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.1.1** The Owner shall secure the building permit from the New York State Education Department.

**§ 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** In accordance 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.

**§ 3.7.2.2** 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.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the

Init.

Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect 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. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

**§ 3.8.2** Unless otherwise provided in the Contract Documents:

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Lump Sum Allowances, Unit Cost Allowances and Quantity Allowances: 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;
- .3 Contingency Allowances: Contractor's costs, including all such subcontractor 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. Contractor, and subcontractor, Overhead and profit related to the allowance shall be included as part of the Contract Sum and not part of the allowance; and
- .4 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

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

### **§ 3.9 Superintendent**

**§ 3.9.1** The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect in writing, 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 prepare and 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, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. 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 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.

§ 3.10.3 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.

*(Paragraph deleted)*

### § 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the 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, 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 in writing 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 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 one (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 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.

Note to Specifier: Retain the following subparagraph for a school project.

- .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 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 expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

## ARTICLE 4 ARCHITECT 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 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents. 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.

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

§ 4.2.2.2 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Construction Manager for site visits made necessary by the fault of the Contractor or by defects and deficiencies 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 about the rejection. The Construction Manager shall determine in general whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional 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, material and equipment 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.

Init.

§ 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 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 Change Orders and Construction Change Directives.

§ 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.

§ 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 duties, responsibilities and limitations of authority of the Project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents. 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 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.

Init.

§ 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 Separate Contractors or the subcontractors of 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 or the bidding requirements, as soon as practicable after award of the Contract, shall notify 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 for each principal portion of the Work. 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.

§ 5.2.5 The Contractor shall perform at least twenty-five (25) percent of the cost of the Contract (not including the costs of materials, insurance, bonds, submittals and similar items) with its own employees.

### **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, 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 term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

**§ 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

Init.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

#### § 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner'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 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, fifteen (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.

#### § 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 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

*(Paragraphs deleted)*

unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 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, whether rented from the Contractor or others;

§ 7.3.6 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.

§ 7.3.7 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.

§ 7.3.8 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.

§ 7.3.9 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.

§ 7.3.10 NOT USED

§ 7.3.11 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** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

**§ 9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

**§ 9.1.2** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the 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 NOT USED**

**§ 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 95 percent of the amount due the Contractor on account of progress payments. At Substantial Completion, the Construction Manager and Architect may authorize remaining partial payments to be made in full, less twice the value of items remaining to be completed and an amount necessary to satisfy any outstanding claims, liens, or judgments.

**§ 9.3.1.4** "Applications for Payment must be accompanied by any and all releases of liens for previous applications from Contractor and his/her subcontractors and a sworn and notarized statement that all subcontractors have been paid to at least 95% of previously requisitioned sums.

Init.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The 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** The Construction Manager's certification of an Application 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.

*(Paragraph deleted)*

**§ 9.4.3** The Architect's issuance of a 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.

**§ 9.4.4** 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.

**§ 9.4.5** The issuance of a 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.

*(Paragraph deleted)*

#### **§ 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 9.4.2 and 9.4.3 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. 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; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect 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, 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 material and equipment 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 material and equipment 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 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' written 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.

### § 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.

*(Paragraph deleted)*

§ 9.8.2 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 ready for the Substantial Completion inspection. 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. Absence 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.

§ 9.8.2.1 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 is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

§ 9.8.3 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.4 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.

*(Paragraph deleted)*

**§ 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. 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 On or within seven (7) days following the date of Final Completion (as established in the bid documents or modified by Change Order) the Architect will conduct a final inspection of the work. As a result of that inspection, the Architect will issue a Final Inspection Report. This report will document the condition of the work and will render a formal opinion as to the whether or not the work or designated portion is complete. If, as a result of the Architect's inspection, it is determined that the work is not complete and in accordance with the Contract Documents, the Architect shall notify the Owner and Contractor in writing of this opinion. This notice will include the Final Inspection Report documenting the conditions of the work and will be considered a formal notice to the Contractor of their failure to fulfill the terms and conditions of their contract.

If as a result of this inspection, it is determined that the work is complete, the Contractor shall submit their Final Payment Application and Certificate for Payment. The Architect will then certify and issue the final Certificate for Payment stating that to the best of the Architects knowledge, information and belief, and on the basis of the Architect's periodic site visits and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for payment will constitute a further representation that the conditions listed in section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. The final Certificate for Payment will not be issued until all work on the final inspection report is completed or corrected.

§ 9.10.1.1 The Architect will perform no more than one on-site observation to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional on-site observations.

§ 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.

## 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 Contractor shall be responsible for maintaining safety data sheets at the site.

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** 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.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

#### § 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, 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. The policy certificate must include the project name.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice 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 written 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.

§ 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 affected 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.

### § 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 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

Init.

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 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.

### § 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, 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 13.7.

### § 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, under direct or indirect contract with the Contractor, 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
- .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, 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 days' notice to the Owner, 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.

**§ 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 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 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, 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' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and

- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the 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 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 shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of this Contract.

### § 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written 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 case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 Claims

§ 15.1.1 **Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

### § 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

Init.

### § 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.

*(Paragraph deleted)*

§ 15.1.3.2 Written notice shall contain a heading stating "Notice of Claim" to clearly identify it as such. Such notice shall set forth in detail the circumstances that form the basis for the Claim and shall include the following:

- .1 Clear statement of claim matter, including background and chronology.
- .2 Documentation in support of claim matter.
- .3 Documentation in support of claimed damages.
- .4 Certification by responsible officer of claimant.

§ 15.1.3.3 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

### § 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 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, written notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

### § 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

**§ 15.1.7 Waiver of Claims for Consequential Damages.** 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.

## **§ 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 arising prior to the date of final payment is due. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

**§ 15.3 Mediation**

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 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

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 14:10:43 ET on 01/11/2022.

## PAGE 1

Reconstruction to  
Rombout Middle School SED #13-02-00-01-0-004-021  
Beacon High School SED #13-02-00-01-0-020-011  
Tt Project Number 279180-22001

...

UW Marx, Inc.  
20 Gurley Avenue  
Troy, New York 12128

...

Beacon City School District  
10 Education Drive  
Beacon, New York 12508

...

Tetra Tech Engineers, Architects & Landscape Architects, P.C.  
d/b/a Tetra Tech Architects & Engineers  
500 Bi-County Boulevard, Suite 104  
Farmingdale, New York 11735

## 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.

...

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

## PAGE 4

Additions and Deletions Report for AIA Document A232™ – 2019. Copyright © 1992, 2009, and 2019 by The American Institute of Architects. All rights reserved. The "American Institute of Architects," "AIA," the AIA Logo, and "AIA Contract Documents" are registered trademarks and may not be used without permission. This document was produced by AIA software at 14:10:43 ET on 01/11/2022 under Order No.2191696418 which expires on 02/27/2022, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents® Terms of Service. To report copyright violations, e-mail [copyright@aia.org](mailto:copyright@aia.org).

User Notes:

(1313630264)

§ 1.2.3.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- .1 Modifications, as defined in Section 1.1.1.
- .2 The Agreement.
- .3 Addenda, with those of later date having precedence over those of earlier date.
- .4 The General Conditions of the Contract for Construction.
- .5 Division 01 of the Specifications.
- .6 Drawings and remaining Divisions of the Specifications.

In the case of conflicts or discrepancies between Drawings and Divisions of the Specifications (other than Division 01), or within or among the Contract Documents and not clarified by Addendum, the Architect will determine which takes precedence in accordance with Sections 4.2.11, 4.2.12, and 4.2.13.

PAGE 6

§ 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 three (3) 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 endeavor to forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6. Manager and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents.

...

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written 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

§ 3.2.2.1 Do not scale Drawings. Follow figure dimensions, confirming on site.

PAGE 8

§ 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for evaluating and 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.

...

§ 3.4.2.1 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.

PAGE 9

§ 3.6.1 NOT USED

...

§ 3.7.1.1 The Owner shall secure the building permit from the New York State Education Department.

§ 3.7.2.1 In accordance 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.

§ 3.7.2.2 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.

PAGE 10

- .1 ~~allowances~~ 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 ~~Lump Sum Allowances, Unit Cost Allowances and Quantity Allowances:~~ 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;
- .3 ~~Contingency Allowances:~~ Contractor's costs, including all such subcontractor 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. Contractor, and subcontractor, Overhead and profit related to the allowance shall be included as part of the Contract Sum and not part of the allowance; and
- ~~.3~~ ~~whenever~~ ~~.4~~ Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

...

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

...

**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and ~~Architect,~~ Architect in writing, 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.

PAGE 11

**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and 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, and Project, shall be related to the entire Project to the extent required by the~~ Contract Documents, and shall provide for expeditious and practicable execution of the Work. 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. 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.~~

**§ 3.10.3** ~~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 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.~~

**§ 3.10.4** ~~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.~~

...

**§ 3.12.5** 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.

PAGE 12

§ 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 in writing 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.

...

§ 3.12.11 The Contractor is required to provide all submittals for the Architect's review; all submittals 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 one (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.

PAGE 13

§ 3.13.3 The Contractor shall be responsible for enforcing the Owner's security and access policies and procedures 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.

Note to Specifier: Retain the following subparagraph for a school project.

- .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.

PAGE 14

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents. 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.

§ 4.2.2.1 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for site visits

Additions and Deletions Report for AIA Document A232™ – 2019. Copyright © 1992, 2009, and 2019 by The American Institute of Architects. All rights reserved. The "American Institute of Architects," "AIA," the AIA Logo, and "AIA Contract Documents" are registered trademarks and may not be used without permission. This document was produced by AIA software at 14:10:43 ET on 01/11/2022 under Order No.2191696418 which expires on 02/27/2022, is not for resale, is licensed for one-time use only, and may only be used in accordance with the AIA Contract Documents® Terms of Service. To report copyright violations, e-mail [copyright@aia.org](mailto:copyright@aia.org).

**User Notes:**

(1313630264)

made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

**§ 4.2.2.2** The Owner is entitled to reimbursement from the Contractor for amounts paid to the Construction Manager for site visits made necessary by the fault of the Contractor or by defects and deficiencies in the Work.

PAGE 15

**§ 4.2.8** The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, Documents and will notify each other about the rejection. The Construction Manager shall determine in general whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional 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, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

PAGE 16

**§ 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.

...

**§ 4.2.13** The Construction Manager Architect will prepare Change Orders and Construction Change Directives.

...

**§ 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 duties, responsibilities and limitations of authority of the Project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents. The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

PAGE 17

**§ 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~~.

...

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the ~~Contractor, Contractor or the bidding requirements,~~ as soon as practicable after award of the Contract, shall notify 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, design for each principal portion of the Work. 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.

...

§ 5.2.5 The Contractor shall perform at least twenty-five (25) percent of the cost of the Contract (not including the costs of materials, insurance, bonds, submittals and similar items) with its own employees.

**PAGE 18**

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 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. separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 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. The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

**PAGE 19**

§ 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, fifteen (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.

A Change Order is a written instrument prepared by the ~~Construction Manager-Architect~~ and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

**PAGE 20**

§ 7.3.1 A Construction Change Directive is a written order prepared by the ~~Construction Manager-Architect~~ 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.

...

§ 7.3.4 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, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change, unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 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. 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, whether rented from the Contractor or others;

§ 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. 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.

§ 7.3.7 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. 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.

§ 7.3.8 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. 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.

~~§ 7.3.9 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. 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.~~

~~§ 7.3.10 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. NOT USED~~

~~§ 7.3.11 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.~~

PAGE 21

~~§ 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.~~

PAGE 22

~~§ 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. NOT USED~~

...

~~§ 9.3.1.3 Until Substantial Completion, the Owner shall pay 95 percent of the amount due the Contractor on account of progress payments. At Substantial Completion, the Construction Manager and Architect may authorize remaining partial payments to be made in full, less twice the value of items remaining to be completed and an amount necessary to satisfy any outstanding claims, liens, or judgments.~~

~~§ 9.3.1.4 "Applications for Payment must be accompanied by any and all releases of liens for previous applications from Contractor and his/her subcontractors and a sworn and notarized statement that all subcontractors have been paid to at least 95% of previously requisitioned sums.~~

~~§ 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, material suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.~~

PAGE 23

~~§ 9.4.1 Where there is only one Contractor, the~~ 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. The Construction Manager's certification of an Application 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.~~

~~§ 9.4.2.1 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 Architect's issuance of a 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 Construction Manager's 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.~~

~~§ 9.4.4 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. 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.~~

~~§ 9.4.5 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. Issuance of a 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.~~

~~§ 9.4.6 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.~~

§ 9.5.1 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 9.4.2 and 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. 9.4.1. 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

PAGE 24

~~§ 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, Documents and shall so notify the Construction Manager and Architect.~~

...

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and ~~suppliers material and equipment 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 material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

PAGE 25

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' written 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~~ appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

...

~~§ 9.8.2 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.~~

§ 9.8.2 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 ready for the Substantial Completion inspection. 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. Absence 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.

§ 9.8.2.1 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 is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional inspections.

~~§ 9.8.3 Upon receipt of the list, 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, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof 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 unless otherwise provided in the Certificate of 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. 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.~~

~~§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.~~

§ 9.9.1 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.

PAGE 26

§ 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. On or within seven (7) days following the date of Final Completion (as established in the bid documents or modified by Change Order) the Architect will conduct a final inspection of the work. As a result of that inspection, the Architect will issue a Final Inspection Report. This report will document the condition of the work and will render a formal opinion as to the whether or not the work or designated portion is complete. If, as a result of the Architect's inspection, it is determined that the work is not complete and in accordance with the Contract Documents, the Architect shall notify the Owner and Contractor in writing of this opinion. This notice will include the Final Inspection Report documenting the conditions of the work and will be considered a formal notice to the Contractor of their failure to fulfill the terms and conditions of their contract.~~

If as a result of this inspection, it is determined that the work is complete, the Contractor shall submit their Final Payment Application and Certificate for Payment. The Architect will then certify and issue the final Certificate for Payment stating that to the best of their-the Architects knowledge, information and belief, and on the basis of their on-site the Architect's periodic site visits and inspections, the Work has been completed in accordance with the terms and conditions of 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 Architect's final Certificate for payment will constitute a further representation that the conditions listed in Section-section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. The final Certificate for Payment will not be issued until all work on the final inspection report is completed or corrected.

§ 9.10.1.1 The Architect will perform no more than one on-site observation to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Architect for any additional on-site observations.

PAGE 27

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 Contractor shall be responsible for maintaining safety data sheets at the site.

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.

**PAGE 28**

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.

...

§ 10.3.2 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~~ appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**PAGE 29**

§ 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. The policy certificate must include the project name.

**PAGE 31**

§ 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 written 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.

**PAGE 32**

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~~ affected whether or not final payment has been made.

...

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.is.~~

**§ 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, 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 13.7.

**§ 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.

**§ 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, under direct or indirect contract with the Contractor, for any of the following reasons:

...

**§ 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.

...

**§ 14.2.2** 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' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

**§ 14.4.2** Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

§ 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.

§ 15.1.3.2 Written notice shall contain a heading stating "Notice of Claim" to clearly identify it as such. Such notice shall set forth in detail the circumstances that form the basis for the Claim and shall include the following:

- .1 Clear statement of claim matter, including background and chronology.
- .2 Documentation in support of claim matter.
- .3 Documentation in support of claimed damages.
- .4 Certification by responsible officer of claimant.

§ 15.1.3.3 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.

§ 15.1.4.1 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. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions 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, written 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.

...

§ 15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

§ 15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

#### PAGE 37

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.~~

...

§ 15.2.1 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.~~ Claim arising prior to the date of final payment is due. 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.

...

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the ~~Claim, 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 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.

PAGE 38

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. ~~If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

...

#### § 15.4 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, wgw, 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 14:10:43 ET on 01/11/2022 under Order No. 2191696418 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, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

---

*(Signed)*

---

*(Title)*

---

*(Dated)*





Kathy Hochul, Governor

Roberta Reardon, Commissioner

Beacon City SD  
Lynn Hackett, PM  
500 Bi-County Blvd  
Suite 104  
Farmingdale NY 11735

Schedule Year 2022 through 2023  
Date Requested 01/11/2022  
PRC# 2022000267

Location various  
Project ID# 279180-22001  
Project Type roof replacement

### PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2022 through June 2023. 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



### **TAX EXEMPTION**

The Owner is exempt from payment of FEDERAL, STATE, LOCAL TAXES, AND 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 his 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.

### **PAYROLL RECORDS**

In accordance with Section 1, Paragraph a of Subdivision 3-a of Section 220 of the Labor Law, 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.

## **SECTION 01 10 00 – PROJECT SUMMARY-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 to: Rombout MS and Beacon HS.

1. Project Location:
  - a. Rombout MS: 88 Matteawan Rd., Beacon, NY 12508.
  - b. Beacon HS: 101 Matteawan Rd., Beacon, NY 12508.

B. Owner: Beacon City School District.

1. Address: 10 Education Drive, Beacon, NY 12508.

C. Architect: Tetra Tech Engineers, Architects & Landscape Architects, P.C., d/b/a Tetra Tech Architects & Engineers.

1. Address: 500 Bi-County Boulevard, Suite 104, Farmingdale, NY 11735.

D. Other Owner Consultants: The Owner has retained the following who have prepared designated portions of the Contract Documents:

1. Construction Manager: Jeff West at UW Marx, Inc.

a. Address: 20 Gurley Ave., Troy, NY 12128.

E. Project Representative: Project Representative will be appointed by Owner.

1. Project Representative will provide assistance in administering the Contract for Construction between Owner and Contractor, according to provisions of Division 01 Section, "Project Management and Coordination".

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. Roof reconstruction at 2 school buildings.

B. Type of Contract: Project will be constructed under a single prime contract at each building as follows:

1. Roof Work Contract RC-A1 at Rombout MS.
2. Roof Work Contract RC-A2 at Beacon HS.

## 1.6 CONSTRUCTION SCHEDULE

A. The Work shall be conducted in accordance with the following schedule:

1. Commencement of construction (Off-Site Activities): Immediately following Contract Award.
2. Commencement of construction (On-Site Activities): March 13, 2023.
3. Submittals: Provide all submittals within 30 days after award of contract.
4. Substantial Completion date: June 30, 2023.
5. Final Completion date: 45 days after Substantial Completion.

## 1.7 GENERAL REQUIREMENTS OF CONTRACT

A. Temporary Ventilation: The Contractor is responsible for temporary ventilation before permanent enclosure of building is complete and all associated costs. The Contractor is responsible for temporary ventilation after permanent enclosure of building is complete, but Owner will pay utility-use charges.

1. Use of permanent systems for temporary ventilation is prohibited.

B. 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.

C. Electric Power Service from Permanent Existing System: Electric power from permanent existing system is available for use. Provide metering, connections and extensions of services as required for construction operations.

1. Construction Use Charges: Arrange for electric power service use charges for construction purposes to be billed directly from power company to Owner.

## 1.8 ACCESS TO SITE

A. 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 with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's 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. On-Site Work Hours: Limit work to normal business working hours of 7:00 a.m. to 3:00 p.m., Monday through Friday, except as otherwise indicated. Movement of materials is not permitted in Owner-occupied areas during normal business hours.

1. Other Weekday Hours: As approved by Owner, with 48 hours notice.
2. Weekend Hours: As approved by Owner, with 48 hours notice.
3. Hours for Noisy Activity (in excess of 60 dB): Non-School Days – 7:00 a.m. to 2:00 p.m.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after 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.

D. 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.

E. 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) Minimum 48-hour pre-ventilation of packaged dry products which have odors or VOC emissions, prior to installation. Condition products without containers and packaging to maximize off-gassing of VOCs off-site.
    - 2) Adequate ventilation during and after installation of interior wet products and interior final finishes, and
    - 3) 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.
  
- F. 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

- A. Allowance No. RC-A1: Contingency Allowance: Include the sum of \$5,000.00 for use according to Owner's instructions.
- B. Allowance No. RC-A2: Contingency Allowance: Include the sum of \$5,000.00 for use according to Owner's instructions.

Attachment: Allowance Access Authorization

END OF SECTION 01 21 00

**ALLOWANCE ACCESS AUTHORIZATION:**

**Project: Roof Reconstruction to Rombout MS & Beacon City HS**

**Architect: Tetra Tech Architects & Engineers**

**Project No. 279180-22001**

**Contractor:**

**AAA No.:**

**Initiation Date:**

**The Allowance is allocated as follows:**

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:  
Architect**

**Recommended by:  
Construction Manager [if applicable]**

By (Signature): \_\_\_\_\_

By (Signature): \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**Accepted by:  
Contractor**

**Approved by:  
Owner**

By (Signature): \_\_\_\_\_

By (Signature): \_\_\_\_\_

Date: \_\_\_\_\_

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 – ROOF WORK RC-A1

A. Alternate No. RC-A1: 30 YEAR TOTAL ROOF SYSTEM WARRANTY.

1. Alternate: In lieu of 20 year warranty as in the Base Bid, provide manufacturer's 30 year total roofing system warranty as specified in Section "07 53 23 – EPDM Roofing".

3.2 SCHEDULE OF ALTERNATES – ROOF WORK RC-A2

A. Alternate No. RC-A2: 30 YEAR TOTAL ROOF SYSTEM WARRANTY.

1. Alternate: In lieu of 20 year warranty as in the Base Bid, provide manufacturer's 30 year total roofing system warranty as specified in Section "07 53 23 – EPDM Roofing".

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 and to construction performed by Owner and separate contractors, 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 and 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



.....  
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.
    - 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 summary schedule of values for each allowance.
  - d. Submittals – Include a minimum of **One** percent of contract sum.
  - e. Supervision: Include a minimum of **Three** percent of contract sum.
  - f. Meetings: Provide a separate line item in the schedule of values for Contractor attendance at meetings. Include a minimum of **One** percentage of contract sum.
  - g. Punch List – **Three** percent of contract sum.
  - h. 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) General Contract: **One** 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 Construction Manager.
- C. Application for Payment Forms: Use **AIA Document G702/CMA 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)

END OF SECTION 01 29 00

## **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. Owner's Project Representative activities.
  - 4. Electronic form procedures.
  - 5. Requests for Information (RFIs).
  - 6. 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.

#### 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 FORM PROCEDURES

- A. Use Architect's electronic form procedures for the following functions:
  - 1. Request for Information (RFI) forms and logs.
  - 2. Architect's Supplemental Instruction (ASI) forms and logs. Refer to Division 01 Section "Contract Modification Procedures".
  - 3. Proposal Request (PR) forms and logs. Refer to Division 01 Section "Contract Modification Procedures".
- B. Contractor and other parties granted access by the Architect to Project electronic form procedures 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 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 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 **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. 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 Project Representative 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.
- C. Progress Meetings: Construction Manager will conduct progress meetings at regular intervals, unless otherwise necessitated.
1. Attendees: In addition to representatives of Owner, 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 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.
- D. **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.
- E. **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, 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



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 \_\_\_\_\_



## **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, 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)

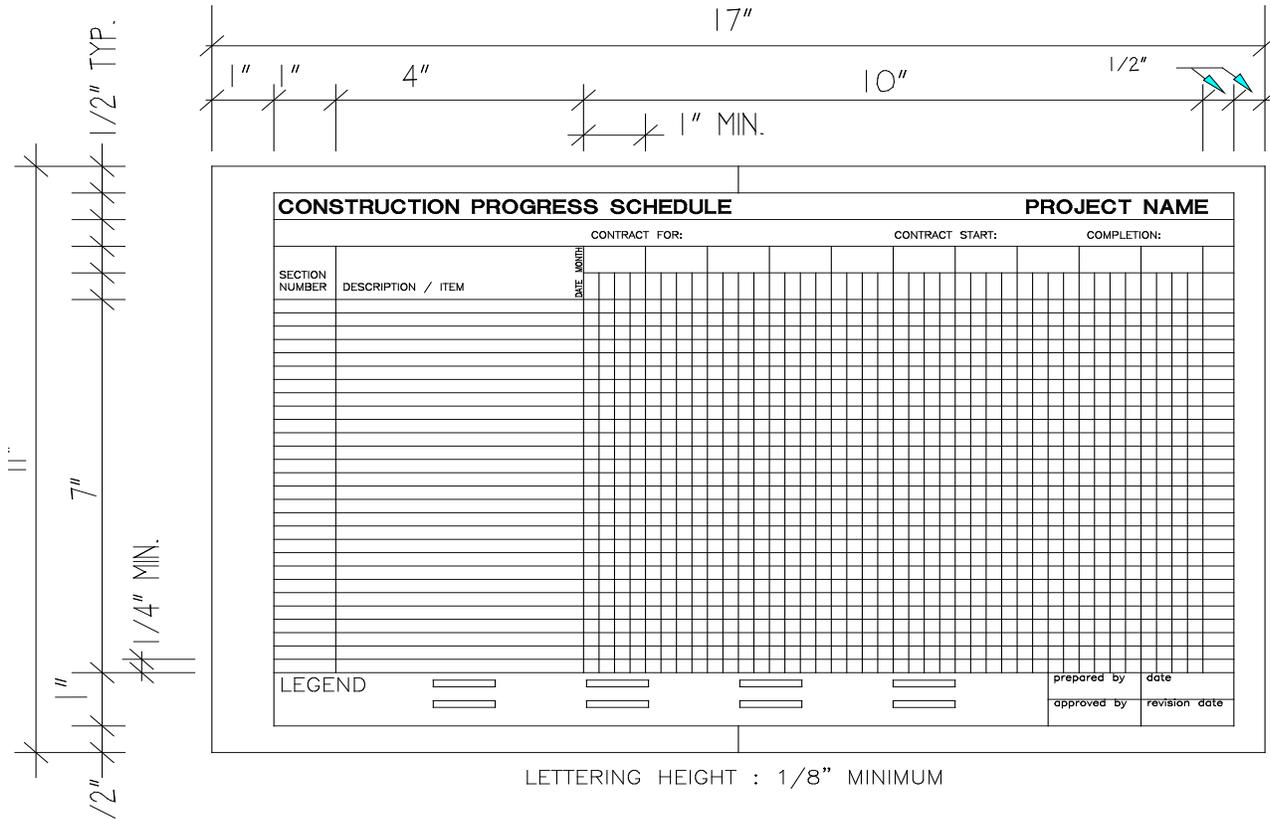
Attachment: Format for Construction Schedule

END OF SECTION 01 32 00

SECTION 01 32 00 - PROJECT SCHEDULE - Attachment #1

FORMAT FOR  
CONSTRUCTION SCHEDULE

(Refer to SECTION 01 32 00, Article 2.2)



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 in 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. Shop Drawings.
  - c. Product Schedules.
  - d. Qualification Data.
  - e. Certificates (Welding, Installer, Manufacturer, Product, and Material, as applicable).
  - f. Test Reports (Material, Product, Preconstruction, Compatibility, and Field, as applicable).
  - g. Research Reports.
  - h. Warranty (sample).
  - i. Design Data, including calculations.
  - j. Coordination Drawings.
  - k. Delegated-Design Services Certifications.
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."
- M. Delegated-Design Services Certification: Submit certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

#### 1.9 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 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

#### 1.13 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.

#### 1.14 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  
                         Delegated Design Submittal Form

END OF SECTION 01 33 00

CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_

SUBMITTAL DATE \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ARCHITECT: Tetra Tech Architects & Engineers

Check following as applicable:

First Submission

Re-Submission No. \_\_\_\_

**PROJECT IDENTIFICATION**

Architect's  
Project No.: 279180-22001 \_\_\_\_\_

Proj. Name: Reconstruction to Rombout MS/Beacon City HS

Location: \_\_\_\_\_

**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. \_\_\_\_\_



**As-Specified Verification Form**

Project Number: \_\_\_\_\_

Project Title: \_\_\_\_\_

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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# DELEGATED DESIGN SUBMITTAL

\_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

SUBMITTAL DATE \_\_\_\_/\_\_\_\_/\_\_\_\_

DESIGN PROFESSIONAL: \_\_\_\_\_

Check following as applicable:

ARCHITECT: Tetra Tech Architects & Engineers

First Submission

Re-Submission No. \_\_\_\_

## PROJECT IDENTIFICATION

Architect's Project No.: \_\_\_\_\_

Proj. Name: \_\_\_\_\_

Location: \_\_\_\_\_

## 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:

## DESIGN PROFESSIONAL'S COMMENTS:

## CONTRACTOR COMMENTS:

## ARCHITECT'S COMMENTS:

## 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. \_\_\_\_\_

## CONTRACTOR'S STAMP

## DESIGN PROFESSIONAL'S CERTIFICATION

I certify that I am a design professional currently licensed in New York State and confirm my responsibility for work included in this submittal in accordance with the General Conditions. Further, I certify that to the best of my knowledge, information and belief, the plans and specifications are in accordance with applicable requirements of the New York State Uniform Fire Prevention and Building Code, the State Energy Conservation Construction Code and construction standards of the Education Department.

BY

## 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 \_\_\_\_\_

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.

## **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).
  - 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 1060, 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.

## 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. **Testing Agency Responsibilities:** Cooperate with Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
  - 1. Notify Architect, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  - 6. Do not perform any duties of Contractor.
- G. **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.

- H. 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.
- I. 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.

## 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 conducting test.
- 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.

END OF SECTION 01 40 00

## **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.aite-glulam.org](http://www.aite-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. AWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
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. MMPA - 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

## 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 facilities.

### 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, Architect, testing agencies, and authorities having jurisdiction.

### 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, construction site entrances, vehicle circulation, and parking areas for construction personnel.

### 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.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails.
- 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.

### 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 vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control. 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.

## 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. 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**] 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
- C. 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.
- D. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- E. 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. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- F. Electric Power Service: 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: Temporary 3-wire plug-in extensions with grounding features at both ends.
- G. Lighting: 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.
- H. Telephone Service: Provide temporary telephone service in Contractor's field office.
  - 1. Provide Contractor's superintendent with cellular telephone or portable two-way radio for use when away from field office.

### 3.4 SUPPORT FACILITIES INSTALLATION

- A. 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: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas **within construction limits indicated** on Drawings.
  - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. 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.
- D. Parking: **Provide temporary** parking areas for construction personnel.
- E. 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 operations.
- F. 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, waste paper, 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.
- G. 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.
- H. 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.
- I. Staging and Scaffolding: Provide facilities necessary for supporting materials and personnel in accordance with requirements of authorities having jurisdiction
- J. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
- K. Temporary Elevator Use: Use of elevators is not permitted.

- L. 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.

### 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. Temporary Erosion and Sedimentation Control:
  - 1. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to "New York State Standards and Specifications for Erosion and Sediment Control" published by Empire State Chapter Soil and Water Conservation Society, under the direction of the New York State Department of Environmental Conservation, Division of Water.
  - 2. General Soil Erosion and Sediment Control Measures:
    - a. Take precautions to prevent mud from construction site accumulating on adjoining public roads and sidewalks and Owner's roads and sidewalks. Clean accumulations of mud from public roads and sidewalks and from Owner's roads and sidewalks when required by public authorities and when directed by Architect.
    - b. Plan and execute construction by methods to control surface drainage from cuts and fills and from borrow areas, and to prevent erosion and sedimentation.
      - 1) Provide temporary measures and erosion control devices or methods appropriate to conditions at site.
      - 2) Construct fills and waste areas by selective placement to avoid erosive surface silts or clays.
- D. 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.
- E. 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.
- F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction as environmentally safe.
- G. Site Enclosure Fence: Before construction operations begin, 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.**
- H. 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.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- K. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
1. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
  2. Paint and maintain appearance of walkway for duration of the Work.
- L. 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.

- M. 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.

- 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. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  - 3. 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 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, 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.
- B. 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 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.

### 3.4 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. **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.

### 3.5 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.
- 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.

### 3.6 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.

### 3.7 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.

### 3.8 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 ready for the Substantial Completion inspection. 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. 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 reinspections 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.
- 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 Construction Manager.
  - 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 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 CD-ROM or thumb 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.

#### 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. Qualification Data: For refrigerant recovery technician.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
  2. Interruption of utility services. Indicate how long utility services will be interrupted.
  3. Coordination for shutoff, capping, and continuation of utility services.
- C. Predemolition Inventory:
  1. Submit list of items to be removed and salvaged as part of selective demolition work.
  2. Submit list of items to be removed and reinstalled as part of selective demolition work.
- D. 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. Inventory:
  - 1. Submit a list of items that have been removed and salvaged.
  - 2. Submit a list of items that have been removed and reinstalled.
- B. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- C. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

## 1.9 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

## 1.10 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.
- 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.

## 1.11 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. Existing warranties include the following:

1. Roofing.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

#### 1.12 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 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

### 3.3 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.

### 3.4 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.

### 3.5 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.

### 3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- B. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Division 07 Sections for new roofing requirements.

### 3.7 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.

3.8 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 04 20 00 - UNIT MASONRY**

### 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. Concrete masonry units.
  - 2. Decorative masonry units
  - 3. Face brick.
  - 4. Mortar and grout.
  - 5. Ties and anchors.
  - 6. Embedded flashing.
  - 7. Miscellaneous masonry accessories.

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals (except Samples for Verification) and informational submittals required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
  - 1. CMUs.
  - 2. Decorative masonry units.
  - 3. Face brick.
  - 4. Portland cement.
  - 5. Hydrated lime.
  - 6. Portland cement-lime mix.
  - 7. Mortar pigments.
  - 8. Colored cement product.
  - 9. Aggregate for mortar.
  - 10. Individual wire ties.
  - 11. Adjustable masonry-veneer anchors.
  - 12. Flexible flashing.
  - 13. Termination bars.
  - 14. Compressible filler.
  - 15. Preformed control-joint gaskets.
  - 16. Bond-breaker strips.

17. Weep/vent products.
18. Cavity drainage material.
19. Proprietary acidic cleaner.
20. Integral Water Repellant.
21. Colored Cement Products.
22. Water Repellant Admixture.

B. Samples for Initial Selection:

1. Face brick, in the form of portable display panels.
2. Decorative masonry units.
3. Colored mortar.

C. Samples for Verification: For each type and color of the following:

1. Face brick, in the form of straps of five or more bricks.
2. Decorative masonry units.
3. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project.

## 1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of the following:

1. Masonry units.
  - a. Include material test reports substantiating compliance with requirements.
  - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
  - c. For exposed brick, include test report for efflorescence according to ASTM C 67.
  - d. For masonry units, include data and calculations establishing average net-area compressive strength of units.
2. Cementitious materials. Include name of manufacturer, brand name, and type.
3. Mortar Admixtures.
4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
5. Grout mixes. Include description of type and proportions of ingredients.
6. Anchors, ties, and metal accessories.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91/C 91M for air content.

2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms; in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

## 1.8 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
  1. Extend cover a minimum of 24 inches down both sides of walls and hold cover securely in place.
  2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
  1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
  2. Protect sills, ledges, and projections from mortar droppings.

3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
  4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

## PART 2 - PRODUCTS

### 2.1 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet (6 m) vertically and horizontally of a walking surface.

### 2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
  2. Provide square-edged units for outside corners unless otherwise indicated.
  3. Provide sizes to match existing, 8" x 16" x 4" nominal – verify in field.
- B. Integral Water Repellent: Provide units made with integral water repellent for units exposed to the exterior and to other units where indicated.
1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested according to ASTM E 514/E 514M as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive, with test period extended to 24 hours, shall show no visible water or leaks on the back of test specimen.

- a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- 1) BASF Corporation; MasterPel 240.
- 2) GCP Applied Technologies, Inc.; Dry-Block Block Admixture.

C. CMUs: ASTM C 90.

1. Density Classification: Lightweight unless otherwise indicated.
2. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
3. Exposed Faces: Provide fine texture units where not exposed to view.

D. Decorative CMUs: ASTM C 90.

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. Nitterhouse Masonry Products, LLC; Architectural Split Face CMU.
  - b. Barnes & Cone, Inc., Split Face CMU.
2. Density Classification: Normal weight.
3. Size (Width): Manufactured to dimensions specified in "CMUs" Paragraph.
4. Pattern and Texture:
  - a. Standard pattern, split-face finish.
  - b. Standard pattern, smooth-face finish, at concealed locations
5. Colors: As selected by Architect from manufacturer's full range to match existing – verify in field. (a minimum of two separate colors is required).

## 2.3 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:

1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
2. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.

Face Brick: Facing brick complying with ASTM C 216.

3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. **Typical at Rombout Middle School:** 50% Glen Gery: "Wirecut Red" modular, 50% Glen Gery "900 Red Matt" modular. Distributed by Bock Brick, Inc., East Syracuse, NY. (Match existing brick – verify in field).
  - b. Grade: SW.
4. Type: FBS.
  5. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested per ASTM C 67.
  6. Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
  7. Size (Actual Dimensions): 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.
  8. Application: Use where brick is exposed unless otherwise indicated.
  9. Where shown to "match existing," provide face brick matching color range, texture, and size of existing adjacent brickwork.
  10. Color and Texture: As selected by Architect.

#### 2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150/C 150 M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
  1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Aggregate for Mortar: ASTM C 144.
  1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
  3. White-Mortar Aggregates: Natural white sand or crushed white stone.
  4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color to match existing.
- E. Aggregate for Grout: ASTM C 404.
  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 Aktiengesellschaft; Rheopel Mortar Admixture.
- b. Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.

F. Water: Potable.

## 2.5 TIES AND ANCHORS

- A. General: Ties and anchors shall extend at least 1-1/2 inches into veneer but with at least a 5/8-inch cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
  1. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
  2. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
- C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
  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. Heckmann Building Products, Inc.; #262/263 Double Eye Rod Anchor and Double Pintle Tie.
    - b. Hohman & Barnard, Inc.; Adjustable Wall Tie.
    - c. Wire-Bond; Adjustable Rectangular Tie 1800/1801.
  2. Where wythes do not align or are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches.
  3. Wire: Fabricate from 3/16-inch-diameter, hot-dip galvanized steel wire.
- D. Anchors for Veneer to Existing Concrete or Masonry, Spiral Type:
  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. Heckmann Building Products, Inc.; #391 Remedial Wall Tie.
    - b. Hohman & Barnard, Inc.; Spira-Lok.
  2. Type 304 stainless-steel spiral rods designed to anchor to backing and veneer. Anchors are flexible in plane of veneer but rigid perpendicular to it.
  3. Provide driven-in anchors designed for installation in drilled holes, relying on screw effect rather than adhesive to secure them to backup and veneer.
- E. Joint Stabilization Anchors: Provide anchors allowing lateral movement, made from stainless-steel.

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. Heckmann Building Products Inc.; #353 Debonded Shear Anchor.
  - b. Hohmann & Barnard, Inc.; Slip-Set Stabilizer.
  - c. Wire-Bond; #1700 Control Joint Anchor.

F. Adjustable Masonry-Veneer Anchors:

1. General: Provide anchors that allow vertical adjustment but resist a 100-lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.
2. Screw-Attached, Masonry-Veneer Anchors: Wire tie and a corrosion-resistant, self-drilling, eye-screw designed to receive wire tie. Eye-screw has spacer that seats directly against framing and is same thickness as sheathing and has gasketed washer head that covers hole in sheathing.
  - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) Heckmann Building Products Inc.; Pos-I-Tie with Pos-I-Tie ThermalClip and Double Pintle Wire Tie.
    - 2) Hohmann & Barnard, Inc.; 2-Seal Thermal Wing Nut AnchorTie with Adjustable Wall Tie (pintle).
    - 3) Wire-Bond; SureTie 4520 and SureTie triangle 4510.
  - b. Wire Ties: Triangular-, rectangular-, or T-shaped wire ties fabricated from 0.187-inch- diameter, hot-dip galvanized steel.

## 2.6 EMBEDDED FLASHING MATERIALS

A. Flexible Flashing: Use the following unless otherwise indicated:

1. Copper-Laminated Flashing: 5-oz./sq. ft. copper sheet bonded between 2 layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
  - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - 1) Advanced Building Products Inc.; Copper Sealtite 2000.
    - 2) York Manufacturing, Inc.; Multi-Flash 500.

B. Termination Bars: Stainless steel bar 1/8-inch by minimum 1-inch, for attachment at 8-inch centers with stainless steel fasteners.

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. Dayton Superior Corporation, Dur-O-Wal Division; DA1510 Termination Bar.
  - b. Hohmann & Barnard, Inc.; #T1 Termination Bar.

- C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

## 2.7 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
  - 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. Hohmann & Barnard, Inc.; NS Closed Cell Neoprene Sponge.
    - b. Wire-Bond; Expansion Joint 3300.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
  - 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. Hohmann & Barnard, Inc.; RS Series Rubber Control Joint.
    - b. Wire-Bond; Rubber Control Joint.
- C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D 226/D 226M, Type I (No. 15 asphalt felt).
- D. Weep/Cavity Vent Products: Use the following unless otherwise indicated:
  - 1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than depth of outer wythe, in color selected from manufacturer's standard.
    - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      - 1) Advanced Building Products Inc.; Mortar Maze Cell Vents.
      - 2) Heckmann Building Products Inc.; #85 Cell Vent.
      - 3) Hohmann & Barnard, Inc.; QV Quadro-Vent.
      - 4) Wire-Bond; Cell Vent 3601.
- E. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity. See the Evaluations.
  - 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. Advanced Building Products Inc.; Mortar Break.
    - b. Hohmann & Barnard, Inc.; Mortar Web.
    - c. Mortar Net USA, Ltd.; Mortar Net.

2. Configuration: Provide one of the following:
  - a. Strips, full-depth of cavity and 10 inches high, with dovetail shaped notches 7 inches deep that prevent clogging with mortar droppings.
  - b. Strips, not less than 3/4 inch thick and 10 inches high, with dimpled surface designed to catch mortar droppings and prevent weep holes from clogging with mortar.

## 2.8 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  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. Diedrich Technologies, Inc.
    - b. EaCo Chem, Inc.
    - c. ProSoCo, Inc.

## 2.9 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  1. Do not use calcium chloride in mortar or grout.
  2. Use portland cement-lime mortar unless otherwise indicated.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, either the Proportion Specification or the Property Specification. Provide the following types of mortar for applications stated unless another type is indicated.
  1. For concrete masonry unit backup in exterior walls, masonry bearing walls, shear walls and masonry below grade or in contact with earth, use Type S. Not for use in masonry veneer construction.
  2. Use Type N mortar in all masonry veneer construction and in all masonry construction other than noted in the requirements for Type S mortar above.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. Verify that foundations are within tolerances specified.
  2. Verify that reinforcing dowels are properly placed.
  3. Verify that substrates are free of substances that impair mortar bond.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- 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, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested according to ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

### 3.3 TOLERANCES

- A. Dimensions and Locations of Elements:
1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch or minus 1/4 inch.
  2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch.
  3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.
- B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

### 3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Match existing unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

### 3.5 MORTAR BEDDING AND JOINTING

- A. Lay masonry units as follows:
  - 1. Bed face shells in mortar and make head joints of depth equal to bed joints.
  - 2. Bed webs in mortar in all courses of piers, columns, and pilasters.
  - 3. Bed webs in mortar in grouted masonry, including starting course on footings.
  - 4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
  - 5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
  - 1. Match existing mortar joint profile.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.
- E. Cut joints flush where indicated to receive air barriers unless otherwise indicated.

### 3.6 COMPOSITE MASONRY

- A. Bond wythes of composite masonry together using the following method:
  - 1. Masonry Joint Reinforcement: Installed in horizontal mortar joints.
    - a. Use adjustable (two-piece) type reinforcement.
- B. Collar Joints: Solidly fill collar joints by parging face of first wythe that is laid and shoving units of other wythe into place.

- C. Corners: Provide interlocking masonry unit bond in each wythe and course at corners unless otherwise indicated.
  - 1. Provide continuity with masonry-joint reinforcement at corners by using prefabricated L-shaped units as well as masonry bonding.
- D. Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at juncture, bond walls together as follows:
  - 1. Provide continuity with masonry-joint reinforcement by using prefabricated T-shaped units.

### 3.7 CAVITY WALLS

- A. Bond wythes of cavity walls together using one of the following methods:
  - 1. Masonry Joint Reinforcement: Installed in horizontal mortar joints.
    - a. Use adjustable (two-piece) type reinforcement with continuous horizontal wire in facing wythe attached to ties.
  - 2. Masonry-Veneer Anchors: Comply with requirements for anchoring masonry veneers.
- B. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.
- C. Installing Cavity-Wall Insulation: Place small dabs of adhesive, spaced approximately 12 inches o.c. both ways, on inside face of insulation boards, or attach with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction as shown.
  - 1. Fill cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

### 3.8 ANCHORED MASONRY VENEERS

- A. Anchor masonry veneers to wall framing and masonry backup with masonry-veneer anchors to comply with the following requirements:
  - 1. Fasten screw-attached anchors through sheathing to wall framing and masonry backup with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
  - 2. Embed tie sections connector sections and continuous wire in masonry joints.
  - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.

4. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally, with not less than one anchor for each 2 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 8 inches, around perimeter.
- B. Provide not less than 2 inches of airspace between back of masonry veneer and face of insulation.
1. Keep airspace clean of mortar droppings and other materials during construction. Bevel beds away from airspace, to minimize mortar protrusions into airspace. Do not attempt to trowel or remove mortar fins protruding into airspace.

### 3.9 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
1. Space reinforcement not more than 16 inches o.c.
  2. Space reinforcement not more than 8 inches o.c. in parapet walls.
  3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

### 3.10 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:
1. Provide an open space not less than 2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
  2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
  3. Space anchors as indicated, but not more than 16 inches o.c. vertically and 16 inches o.c. horizontally.

### 3.11 CONTROL AND EXPANSION JOINTS

- A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

1. Locate joints as indicated on Drawings; however, locate vertical joints not more than 30 feet o.c. for expansion joints in masonry veneer and 24 feet o.c. for control joints in concrete masonry.
- B. Form control joints in concrete masonry as follows:
1. Install preformed control-joint gaskets designed to fit standard sash block.
- C. Form expansion joints in brick as follows:
1. Build in compressible joint fillers where indicated.
  2. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Division 07 Section "Joint Sealants."

### 3.12 FLASHING, WEEP HOLES, AND CAVITY VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install cavity vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
  2. At multiwythe masonry walls, including cavity walls, extend flashing through outer wythe, turned up a minimum of 8 inches, and at least 2 inches above top of cavity drainage material.
  3. At masonry-veneer walls, extend flashing through veneer, across airspace behind veneer, and up face of sheathing at least 8 inches; and at least 2 inches above the top of cavity drainage material.
  4. Secure top of flashing with metal termination bar attached to wall framing 8 inches on center. Apply a continuous bead of compatible sealant to the top of the bar.
  5. At lintels and shelf angles, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
  6. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
- C. Install weep holes in exterior wythes and veneers in head joints of first course of masonry immediately above embedded flashing.

1. Use specified weep/cavity vent products to form weep holes.
  2. Space weep holes 24 inches o.c. unless otherwise indicated.
- D. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Miscellaneous Masonry Accessories" Article.
- E. Install cavity vents in head joints in exterior wythes at 48 inches o.c., unless otherwise indicated. Use specified weep/cavity vent products to form cavity vents.

### 3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 1 special inspections according to the Building Code of New York State.
1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
  2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
  3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- E. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- F. Mortar Test (Property Specification): For each mix provided, according to ASTM C 780. Test mortar for mortar air content and compressive strength.
- G. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.
- H. Prism Test: For each type of construction provided, according to ASTM C 1314 at 28 days. Only required if mortar or grout compressive strength testing does not meet specifications.
- I. Inspect reinforcing for size and placement prior to pouring of grout.
- J. Inspect grout and mortar mixing operations to ensure mix proportions and procedures comply with specified requirements.
- K. Inspect ties and anchors for type, spacing, and proper installation.
- L. Inspect flashing and accessories for type and proper installation.
- M. Inspect all aspects of masonry construction operations for compliance with specified cold weather and/or hot weather procedures.

### 3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
  - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
  - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
  - 5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
  - 6. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.
  - 7. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
  - 8. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

END OF SECTION 04 20 00

## **SECTION 06 10 26 - ROOFING ROUGH CARPENTRY**

### 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. Wood-preservative-treated materials.

#### 1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

#### 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 process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
  - 1. Wood-Preservative-Treated Materials: Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
  - 2. Fasteners.
  - 3. Adhesives.
  - 4. Isolation barrier membrane.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.
- C. Plywood: DOC PS 1, Exterior A-C, unless otherwise indicated.

### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC3b.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- E. Application: Treat items indicated on Drawings, and the following:
  - 1. Wood nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.

### 2.3 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
  - 1. Provide fasteners of Type 304 stainless steel.
- B. Wood Screws for Attachment of Roof Blocking: Screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #10, length as required to provide minimum embedment of 1-1/2-inches into substrate.

- C. Screws for Attachment to Metal Deck: Self drilling screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #10, 2-1/2-inch length (unless otherwise noted).
- D. Screws for Attachment to Steel Angles or Framing: Self drilling screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, #12, 2-1/2-inch length minimum (unless otherwise noted).
  - 1. With Winged Reamers: Wings designed to break off at contact with steel.
- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency. Anchor expands by tightening or hammering a pin after insertion into pre-drilled hole.
  - 1. Material: Stainless steel with bolts and nuts complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2.

## 2.4 MISCELLANEOUS MATERIALS

- A. Adhesives: Low odor, low VOC (less than 2 percent by weight), high-strength polyurethane formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Henkel Corporation; Loctite PL Premium Fast Grab, or a comparable product.
- B. Isolation Barrier Membrane: 40-mil-thick, self-adhering sheet consisting of rubberized asphalt laminated to a cross-laminated polyethylene film with release liner on adhesive side.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlisle Coatings & Waterproofing, Incorporated; CCW-705, or comparable product.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Beginning installation constitutes Contractor's acceptance of substrates and conditions.
- B. Set roofing rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit roofing rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

- C. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- D. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- E. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous isolation barrier membrane between wood and metal decking.

### 3.2 INSTALLATION OF WOOD BLOCKING, NAILERS AND PLYWOOD

- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
  - 1. Provide 1/4-inch vent space between each length of blocking.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with recommendations of FM Global Loss Prevention Data Sheet 1-49 and the following:
  - 1. Anchor bottom blocking to steel angles with minimum 3/8-inch stainless steel bolts with washers, at maximum 24 inches on center, or self-drilling screws in two rows, spaced not more than 24 inches on center and 6 inches from ends of blocking lengths.
  - 2. At locations where bottom blocking is to be attached directly to metal decking, provide isolation barrier membrane between deck and blocking, install wrinkle free. Apply primer if required by membrane manufacturer. Use primer rather than nails for installing membrane at low temperatures, overlap edges not less than 3-1/2 inches, roll laps with roller, cover membrane within 14 days. Attach bottom blocking with stainless steel self-drilling screws, penetrating metal decking at least 1 inch in two rows, spaced not more than 24 inches on center and 6 inches from ends of blocking lengths.
  - 3. Attach subsequent blocking to bottom blocking with stainless steel screws, penetrating at least 1-1/4 inches in two rows, spaced not more than 24 inches on center and 6 inches from ends of blocking lengths.
  - 4. Attach plywood to substrate with stainless steel screws spaced at 12 inches on center maximum. Where more than one layer of plywood is being attached, attach subsequent plywood to base layer of plywood/substrate with polyurethane construction adhesive beads spaced at 6 inches on center maximum and stainless-steel screws, penetrating at least 3/4 inch in two rows, spaced not more than 12 inches on center and within 4 inches from end of panel lengths.
  - 5. At outside building corners, locate fasteners at 12 inches on center and 6 inches from corner, unless closer spacing is required to meet minimum 100 lb per fastener withdrawal force in any direction, or to comply with FM 1-49 recommendations.

END OF SECTION 06 10 26

## **SECTION 07 01 50.19 - PREPARATION FOR RE-ROOFING**

### 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. Roof tear-off.
  - 2. Removal of base flashings.

#### 1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing System: EPDM roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.
- C. Roof Tear-Off: Removal of existing membrane roofing system from deck.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

#### 1.4 SUBMITTALS, GENERAL

- A. General: Submit all informational submittals required by this Section concurrently.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

- B. Existing Roofing System Warranty Documentation: Documentation verifying that existing roofing system has been inspected and warranty remains in effect.

## 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system, licensed to perform asbestos abatement in the State or jurisdiction where Project is located and approved by warrantor of existing roofing system to work on existing roofing.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Project site.
  - 1. Meet with Owner; Architect; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
  - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
    - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
    - b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
    - c. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
    - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress.
    - e. Existing deck removal procedures and Owner notifications.
    - f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
    - g. Structural loading limitations of deck during reroofing.
    - h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
    - i. HVAC shutdown and sealing of air intakes.
    - j. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
    - k. Asbestos removal and discovery of asbestos-containing materials.
    - l. Governing regulations and requirements for insurance and certificates if applicable.
    - m. Existing conditions that may require notification of Architect before proceeding.

## 1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.

- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
  - 1. The results of an analysis of test cores from existing membrane roofing system are available for Contractor's reference.
- E. Handle and store materials and place equipment in a manner to avoid deflection of deck, overloading, and possible disturbance to the building structure.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- G. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.
  - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner.

## 1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing roofing system warranty. Notify warrantor before proceeding.
  - 1. Notify warrantor of existing roofing system on completion of reroofing, and obtain documentation verifying that existing roofing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

## PART 2 - PRODUCTS

### 2.1 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of [**existing and**] new membrane roofing system.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect existing membrane roofing system that is indicated not to be reroofed.

1. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
  2. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
- B. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- C. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
1. Test, verify and confirm existing roof drains are operational **and document conditions at each roof drain in writing** prior to beginning work.
- D. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- E. Verify that rooftop utilities and service piping have been shut off before beginning the Work.
- F. Beginning reroofing preparation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.
1. Remove cover boards, roof insulation and substrate boards.
  2. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry. Remove unadhered bitumen and felts and wet felts.
  3. Remove excess asphalt from steel deck. A maximum of 15 lb/100 sq. ft. of asphalt is permitted to remain on steel decks.
  4. Remove fasteners from deck.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. Verify that concrete substrate is visibly dry and free of moisture.

- C. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- D. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

### 3.4 EXISTING BASE FLASHINGS

- A. Remove existing base flashings and counterflashings around parapets, curbs, walls, and penetrations.
  - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

### 3.5 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
  - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07 01 50.19

## **SECTION 07 42 93 – WALL AND SOFFIT PANELS**

### 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 soffit panels.

#### 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 indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
  - 1. Miscellaneous metal subframing and furring.
  - 2. Panel accessories.
  - 3. Flashing and trim.
  - 4. Panel fasteners.
  - 5. Flush-profile metal soffit panels.
- B. Shop Drawings:
  - 1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
  - 2. Accessories: Include details of flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.
- C. Samples: For each type of metal panel indicated with factory-applied color finishes.
  - 1. Include similar Samples of trim and accessories involving color selection.
- D. Sample Warranties: For special warranties.

## 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal panels to include in maintenance manuals.
- B. Executed Warranties: For special warranties.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on metal panels during installation.

## 1.8 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

## 1.9 COORDINATION

- A. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of walls, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

## 1.10 WARRANTY

- A. Special Installer's Warranty: Installer's warranty in which Installer agrees to correct or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including rupturing, cracking, or puncturing.
    - b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to restore finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
1. Wind Loads: As indicated on Drawings.
  2. Other Design Loads: As indicated on Drawings.
  3. Deflection Limits: For wind loads, no greater than 1/180 of the span.
- B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E283 at the following test-pressure difference:
1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

### 2.2 METAL SOFFIT PANELS

- A. Provide factory-formed metal soffit panels designed to be field assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.

- B. Flush-Profile Metal Soffit Panels: Solid panels formed with vertical panel edges and a flat pan between panel edges; with flush joint between panels.
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. Fabral; Décor Flush II.
    - b. Firestone Building Products Company, LLC; Una-Clad UC-500 Flush Panel Systems.
    - c. Petersen Aluminum Corporation; Pac-Clad Flush panels.
  2. Aluminum Sheet: Coil-coated sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
    - a. Thickness: .050 inch.
    - b. Surface: Smooth, flat finish.
    - c. Exterior Finish: Two-coat fluoropolymer.
    - d. Color: 'White' as selected by Architect from manufacturer's full range.
  3. Panel Coverage: 12 inches.
  4. Panel Height: 1.0 inch.

### 2.3 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 coating designation or ASTM A792/A792M, Class AZ50 aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal panels.
- D. Panel Fasteners: Concealed self-tapping screws designed to withstand design loads. Provide EPDM or PVC sealing washers.
- E. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
  2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
  3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

## 2.4 FABRICATION

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
  - 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
  - 2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
  - 3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.
  - 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
  - 5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
    - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal soffit panel manufacturer for application but not less than thickness of metal being secured.

## 2.5 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Aluminum Panels and Accessories:
  - 1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.
  - 1. Examine framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal panel manufacturer.
  - 2. Examine sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal panel manufacturer.
- B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
- 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. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

### 3.3 INSTALLATION

- A. Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 1. Shim or otherwise plumb substrates receiving metal panels.
  - 2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
  - 3. Install screw fasteners in predrilled holes.
  - 4. Locate and space fastenings in uniform vertical and horizontal alignment.
  - 5. Install flashing and trim as metal panel work proceeds.
  - 6. Panel splices are not permitted; use only full-length panels.
  - 7. Provide weathertight escutcheons for items penetrating panels.
- B. Fasteners:
  - 1. Aluminum Panels: Use stainless steel fasteners.

- C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.
- D. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
1. Apply panels and associated items true to line for neat and weathertight enclosure.
  2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
  3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
  4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
- E. Watertight Installation:
1. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels and elsewhere as needed to make panels watertight.
  2. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
  3. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.
- F. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal panel system including trim, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal panel manufacturer; or, if not indicated, provide types recommended by metal panel manufacturer.
- G. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.
1. Install exposed flashing and trim that is without buckling, and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to achieve waterproof performance.
  2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

### 3.4 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
- B. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.
- C. Replace metal panels that have been damaged or have deteriorated beyond successful restoration by finish touchup or similar minor restoration procedures.

END OF SECTION 07 42 93

## **SECTION 07 53 23 - EPDM ROOFING**

### 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. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.
2. Substrate board.
3. Vapor/air retarder.
4. Roof insulation.
5. Cover board.
6. Walkways.

#### 1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D1079 and glossary of NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Construction Manager, testing and inspecting agency representative, roofing Installer, roofing Installer's superintendent, roofing system manufacturer's technical representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress.
4. Examine deck substrate conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review building occupancy, safety, HVAC and equipment shut-downs, noise levels and other items that will affect the building occupants and those on or near the site.

9. Review roof observation and repair procedures after roofing installation.

## 1.5 SUBMITTALS, GENERAL

- A. General: Submit all action submittals and informational submittals (except field quality-control reports) required by this Section concurrently.

## 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1. EPDM sheet.
2. Sheet flashing.
3. Bonding adhesive.
4. Adhesive/primer.
5. Seaming material.
6. Lap sealant.
7. Water cutoff mastic.
8. Metal termination bars.
9. Fasteners.
10. Miscellaneous accessories.
11. Substrate board.
12. Self-adhering-sheet vapor/air barrier.
13. Polyisocyanurate board insulation.
14. Tapered insulation.
15. Insulation fasteners.
16. Insulation adhesive.
17. Cover board.
18. Flexible walkway pads.

- B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout, R-values and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation, thickness, R-values and slopes.
5. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
6. Walkway pad layout.

- C. Samples: For the following products:

1. Roof membrane and flashings.
2. Substrate board.
3. Roof insulation.
4. Cover board.
5. Walkway pads.

- D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.
- E. Sample Warranties: For manufacturer's special warranties and special Project warranties.

#### 1.7 INFORMATIONAL SUBMITTALS

- A. Manufacturer Certificates:
  - 1. Performance Requirement Certificate: Signed by roof membrane manufacturer, identifying all roof system components and certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
    - a. Submit evidence of complying with performance requirements.
  - 2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
- B. Field quality-control reports.

#### 1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.
- B. Warranty: Executed special warranties and special Project warranties.
- C. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

#### 1.9 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is UL listed, listed in FM Approvals' RoofNav and listed in SPRI's Directory of Roof Assemblies for roofing system identical to that used for this Project.
  - 1. Manufacturer's Technical Representative: A non-sales technical representative who shall, at a minimum:
    - a. Participate in the Preinstallation Roofing Conference.
    - b. Witness start of roofing membrane installation.
    - c. Inspect the roofing membrane installation when work is approximately 50 percent complete to ascertain that procedures being followed are proper and to determine whether any corrective work will be required.
    - d. Inspect the roofing membrane installation at completion to determine whether any corrective work will be required prior to issuing the warranty. Notify the Owner and Architect a minimum of 72 hours before said inspection.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive

manufacturer's special warranty, and has successfully completed a minimum of three similar-sized projects in the last five years.

1. Installer's Superintendent Qualifications: An experienced superintendent who is trained and approved by roofing system manufacturer, to oversee installation on-site of roofing system at all times roofing work is in progress.
  2. Provide adequate number of experienced workers regularly engaged in this type of work who are skilled in the application techniques of the materials specified.
  3. Installer is approved by warrantor of existing roofing system.
- C. Identification: Identify product R-values with manufacturer's markings, or certification, in accordance with requirements of building Code in effect for the Project.

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
  1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
  1. Do not install materials that are wet or moisture damaged; remove from Project site.
- D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

#### 1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Proceed with work such that recently completed roof areas are not subjected to construction traffic. Protect recently completed roof areas and inspect for possible damage.

#### 1.12 COORDINATION

- A. Coordinate construction operations on or adjacent to roof, included in different Sections, which depend on each other for proper installation, connection, and operation.

## 1.13 WARRANTY

- A. Special Warranty: Manufacturer's total system "edge-to-edge" warranty, without monetary limitation, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Pro-rated warranties are not acceptable.
1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, adhesives, cover boards, substrate board, vapor/air retarders, walkway pads and other components of roofing system.
  2. Special warranty includes roof specialties specified in Division 07 Section "Roof Specialties."
  3. Special warranty includes coverage for wind damage sustained up to wind speed requirements specified in "Performance Requirements" Article.
  4. Special warranty includes coverage for hail resistance.
  5. Warranty Period: 20-years (Base Bid), 30-years (Alternate) from Date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, covering the Work of this Section, and roof specialties specified in Division 07 Section "Roof Specialties" including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, adhesives, cover boards, substrate boards, vapor/air retarders, walkway pads and other components, against leaks and faulty or defective materials and workmanship, and to repair or replace work, without monetary limitation, for the following warranty period:
1. Warranty Period: 2 years from Date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.
1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
  2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272, or the Resistance to Foot Traffic Test in FM Approvals 4470.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience. Materials shall comply with the Building Code of New York State.

- C. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures calculated according to the requirements of the Building Code of New York State, which references ASCE/SEI 7:
  - 1. Wind Speed: As indicated on Drawings.
  - 2. Wind Uplift Pressures: As indicated on Drawings.
- D. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
  - 1. Fire/Windstorm Classification: **Class 1A-90**.
  - 2. Hail-Resistance Rating: FM Global Property Loss Prevention Data Sheet 1-34 MH.
- E. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.
- F. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

## 2.2 MANUFACTURERS

- A. Source Limitations: Obtain components for roofing system from roof membrane manufacturer or manufacturers approved by roof membrane manufacturer.

## 2.3 ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING

- A. EPDM Sheet: ASTM D4637/D4637M, Type I, nonreinforced, fire-retardant EPDM sheet.
  - 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. Carlisle SynTec Incorporated.
    - b. Firestone Building Products.
    - c. Johns Manville; a Berkshire Hathaway company.
  - 2. Thickness: 60 mils (Base Bid), 90 mils (Alternate), nominal.
  - 3. Sheet Width: Maximum allowable for applicable installation.
  - 4. Exposed Face Color: Black.

## 2.4 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
  2. Adhesives and sealants on the interior side of weather barrier shall comply with the following limits for VOC content:
    - a. Plastic Foam Adhesives: 50 g/L.
    - b. Panel Adhesives: 50 g/L.
    - c. Multipurpose Construction Adhesives: 70 g/L.
    - d. Fiberglass Adhesives: 80 g/L.
    - e. Other Adhesives: 250 g/L.
    - f. Single-Ply Roof Membrane Sealants: 450 g/L.
    - g. Nonmembrane Roof Sealants: 300 g/L.
    - h. Sealant Primers for Nonporous Substrates: 250 g/L.
    - i. Sealant Primers for Porous Substrates: 775 g/L.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.
- C. Bonding Adhesive: Manufacturer's standard, low-VOC type.
- D. Adhesive/Primer: Manufacturer's standard, low-VOC type.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlisle SynTec Incorporated; Cav-Grip III Low-VOC Adhesive/Primer, or comparable product.
- E. Membrane Cleaner: Manufacturer's standard.
- F. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 6-inch-wide minimum, butyl splice tape with release film.
1. At Contractor's option, seam tape may be factory-applied type.
- G. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- H. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- I. Metal Termination Bars: Manufacturer's standard, predrilled at 6-inch centers aluminum bars, approximately 1 by 1/8 inch thick; with sealant ledge.
1. Fasteners: Series 300 stainless steel drive pin fasteners for masonry substrate embedment, Series 300 stainless steel screw-type fasteners at wood substrate embedment.
- J. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to roofing system manufacturer.
1. Fasteners at Wood-Preservative-Treated Lumber: Screws complying with ASME B18.6.1. Series 300 stainless steel, non-magnetic, torx or square drive, #10, length as required to provide minimum embedment of 1-1/2-inches into substrate.
- K. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced

EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

## 2.5 SUBSTRATE BOARDS

- A. Substrate Board: ASTM C1278/C1278M, fiber-reinforced gypsum board.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide United States Gypsum Company; USG Securock Brand Gypsum-Fiber Roof Board, or comparable product.
  - 2. Thickness: 1/2 inch.
  - 3. Size: 48 by 96 inches.
  - 4. Surface Finish: Factory primed.
- B. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate panel to roof deck.
  - 1. Provide white fasteners where underside of roof deck will remain exposed to view.

## 2.6 VAPOR/AIR RETARDER

- A. Self-Adhering-Sheet Vapor/Air Retarder: ASTM D1970/D1970M, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil-total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor/air retarder manufacturer.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Carlisle SynTec Incorporated; VapAir Seal 725TR, or comparable product.

## 2.7 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM roof membrane manufacturer, and in compliance with “Performance Requirements” Article.
  - 1. Minimum Total System R-Value: 30.
- B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, glass-fiber mat facer on both major surfaces.
  - 1. Provide insulation tested as part of an assembly that satisfactorily passes UL 1256.
  - 2. Compressive Strength: 20 psi.
  - 3. Size: 48 by 48 inches, for adhered installation and 48 by 96 inches, for mechanical attachment.
  - 4. Thickness:
    - a. Base Layer: Not less than 2.4 inches.
    - b. Upper Layer: Not less than 2.4 inches.
- C. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: Match roof insulation.
2. Minimum Thickness: 1/2 inch.
3. Slope:
  - a. Roof Field: 1/8 inch per foot unless otherwise indicated on Drawings.
  - b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.
4. Provide fiber board tapered edge strips to transition from 1/2-inch to 0-inch.

## 2.8 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.
- B. Fasteners: Factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  1. Bead-applied, low-rise, multicomponent urethane adhesive.
  2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Carlisle SynTec Incorporated; FAST Dual Cartridge Adhesive.
    - b. Firestone Building Products; I.S.O. Twin Pack Insulation Adhesive.
    - c. Johns Manville; a Berkshire Hathaway company; JM Two-Part Urethane Insulation Adhesive.
- D. Cover Board: ASTM C1289 Type II, Class 4, Grade 1, 1/2-inch-thick polyisocyanurate, with a minimum compressive strength of 80 psi.
  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. Carlisle SynTec Incorporated; SecurShield HD Polyiso.
    - b. Firestone Building Products; Isogard HD Cover Board.
    - c. Johns Manville; a Berkshire Hathaway company; ProtectoR HD.

## 2.9 WALKWAYS

- A. Flexible Walkway Pads: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads, not less than 0.30-inch thick and acceptable to roofing system manufacturer.
  1. Size: Approximately 30 by 30 inches.

## 2.10 ROOF INFORMATION DECALS

- A. Roofing manufacturer's roof information decal including the following information clearly printed in permanent ink:
  - 1. Name of roofing manufacturer.
  - 2. Name of roofing installer.
  - 3. Type of roofing system including membrane type and thickness.
  - 4. Date of substantial completion.
  - 5. Manufacturer's project identification number.
  - 6. Roofing system warranty duration.
  - 7. Telephone number for reporting warranty-related questions.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
  - 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
  - 3. Verify that steel roof deck is solid and securely attached.
  - 4. Verify that concrete substrate is visibly dry and free of moisture.
- 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. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Remove all debris from metal deck flutes.
- C. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

### 3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, in compliance with "Performance Requirements" Article assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.

### 3.4 INSTALLATION OF SUBSTRATE BOARD AT STEEL DECK

- A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.
  - 1. At steel roof decks, install substrate board at right angle to flutes of deck.
    - a. Locate end joints over crests of steel roof deck.
  - 2. Tightly butt substrate boards together.
  - 3. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 4. Mechanically Attached Substrate Boards: Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturers' written instructions and in compliance with "Performance Requirements" Article; minimum quantity: one fastener per 2 square feet at field and perimeter, one fastener per square foot at corners.
    - a. Steel Deck: Size fasteners to extend no further than elevation of bottom flute.

### 3.5 INSTALLATION OF VAPOR/AIR RETARDER

- A. Self-Adhering-Sheet Vapor/Air Retarder: Thoroughly clean and prime substrate if required by manufacturer. Install self-adhering-sheet vapor/air retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 and 6 inches, respectively.
  - 1. Extend vertically up parapet walls and projections to a minimum height equal to height of insulation and cover board.
  - 2. Seal laps by rolling.
- B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

### 3.6 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Insulation Installation, General:
  - 1. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. Make joints between adjacent insulation boards not more than 1/8 inch in width.
  - 3. Fill gaps exceeding 1/8 inch with insulation.
  - 4. Cut and fit insulation within 1/8 inch of nailers, projections, and penetrations.
  - 5. Keep manufacturer's R-value markings readily observable in accordance with building Code in effect for Project.
  - 6. Construct tapered sumps at roof drain locations as shown on Drawings.
  - 7. Install fiber board tapered edge strips to transition from 1/2-inch to 0-inch.
  - 8. Trim insulation so that water flow is unrestricted.
- D. Installation Directly Over Metal Decking:
  - 1. Mechanically Attached Base Layer: Install base layer of insulation with end joints staggered not less than 12 inches in adjacent rows and with long joints continuous at right angle to flutes of decking.
    - a. Locate end joints over crests of decking.
    - b. Mechanically attach base layer of insulation using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
      - 1) Fasten insulation to resist specified uplift pressure in compliance with "Performance Requirements" Article; minimum quantity: one fastener per 2 square feet at field and perimeter, one fastener per square foot at corners.
      - 2) Fasten into top flutes only; with fastener length not to exceed elevation of bottom flute.
  - 2. Adhered Upper Layers: Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
    - a. Stagger end joints within each layer not less than 24 inches in adjacent rows.
    - b. Adhere each layer of insulation to substrate using adhesive in compliance with "Performance Requirements" Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
      - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, applied at a maximum of 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.
      - 2) When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the

roof board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.

- 3) Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.

E. Installation Over Substrate Board and Vapor/Air Retarder on Steel Decking:

1. Adhered Base Layer: Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows.
  - a. Adhere base layer of insulation to substrate in compliance with “Performance Requirements” Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set base layer of insulation in ribbons of bead-applied insulation adhesive, applied at a maximum of 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.
    - 2) When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the roof board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.
    - 3) Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.
2. Adhered Upper Layers: Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
  - a. Stagger end joints within each layer not less than 24 inches in adjacent rows.
  - b. Adhere each layer of insulation to substrate using adhesive in compliance with “Performance Requirements” Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, applied at a maximum 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.
    - 2) When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the roof board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.
    - 3) Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.

F. Installation Over Concrete Decks:

1. Adhered Base Layer: Thoroughly clean and prime deck surface, install base layer of insulation with joints staggered not less than 24 inches in adjacent rows.

- a. Adhere base layer of insulation to concrete roof deck in compliance with “Performance Requirements” Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
  - 1) Set insulation in ribbons of bead-applied insulation adhesive, applied at a maximum of 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.
  - 2) When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the roof board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.
  - 3) Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.
2. Adhered Upper Layers: Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
  - a. Stagger end joints within each layer not less than 24 inches in adjacent rows.
  - b. Adhere each layer of insulation to substrate using adhesive in compliance with “Performance Requirements” Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, applied at a maximum of 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.
    - 2) When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the roof board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.
    - 3) Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.

### 3.7 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
  1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks. Cut or score boards at angle changes to avoid bridging.
  2. Cut and fit cover board tight to nailers, projections, and penetrations.
  3. Adhere cover board to substrate using adhesive in compliance with “Performance Requirements” Article and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - a. Set cover board in ribbons of bead-applied insulation adhesive, applied at a maximum of 4 inches on center at all field, perimeter, and corner roof areas, firmly pressing and maintaining insulation in place.

- b. When installing the adhesive, do not allow the adhesive installation pattern to exceed the width of the board being installed. Exceeding the width of the cover board may cause an uneven application of the adjacent board due to the rising adhesive. Remove any excess adhesive from adjacent surfaces immediately prior to rising and curing.
- c. Walk the boards into the adhesive and roll with a 30-inch wide, 150-pound weighted steel roller to ensure full embedment.

### 3.8 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Thoroughly clean substrate of all debris, projections, and substances detrimental to membrane installation, including stray projections of adhesive.
- B. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- C. Unroll membrane roof membrane and allow to relax before installing.
- D. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- E. Accurately align roof membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- F. Bonding Adhesive: Apply 100 percent coverage to substrate and underside of roof membrane at rate required by manufacturer and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- G. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.
- H. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- I. Apply pressure to the membrane surface in accordance with manufacturer's instructions to obtain maximum contact between the membrane and substrate.
- J. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.
  - 1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation.
  - 2. Apply lap sealant and seal exposed edges of roofing terminations.
  - 3. At Contractor's option, use manufacturer's factory-applied seam tape installation system.
- K. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- L. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.9 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.10 INSTALLATION OF WALKWAY PADS

- A. Flexible Walkway Pads: Install walkway pads according to manufacturer's written instructions.
  - 1. Install flexible walkway pads at the following locations:
    - a. Perimeter of each rooftop unit (not required at fans and small condensers).
    - b. Top and bottom of each roof access ladder.
    - c. Roof access points/doors.
    - d. Locations indicated on Drawings.
    - e. As required by roof membrane manufacturer's warranty requirements.
  - 2. Adhere walkway products to substrate according to roofing system manufacturer's written instructions leaving a 1 ½ space between pads.

### 3.11 ROOF INFORMATION DECAL INSTALLATION

- A. Adhesively attach roofing manufacturer's Roof Information Decal at all roof access points (i.e. inside face of hatches, doors, etc. leading to the roof).

### 3.12 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- B. Correct or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

### 3.13 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, correct substrates, and correct or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Thoroughly clean all roof and ground areas of dust, debris, excess materials and equipment.
- D. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 53 23

## **SECTION 07 71 00 - ROOF 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. Roof-edge specialties.
2. Roof-edge drainage systems.
3. Roof drain inserts.
4. Counterflashings.

- B. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Installer, and installers whose work interfaces with or affects roof specialties.
2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals (except Samples for Verification) and informational submittals required by this Section and by Division 07 Section "EPDM Roofing" concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1. Fasteners.
2. Canted roof-edge fascia.
3. Fascia sump.
4. Downspouts.
5. Splashblocks.
6. Roof drain inserts.
7. One-piece counterflashings.
8. Two-piece counterflashings.

- B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
  2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
  3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
  4. Detail termination points and assemblies, including fixed points.
  5. Include details of special conditions.
- C. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- D. Samples for Verification: For each type of roof specialty indicated, made from 12-inch lengths of full-size components in specified material, and including fasteners, cover joints, accessories, and attachments, as follows:
1. Copings.
  2. Roof-edge specialties.
  3. Roof-edge drainage systems.
  4. Counterflashings.
- E. Sample Warranty: For manufacturer's special warranty.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer Certificates: For each type of roof specialty, as required by Division 07 Section "EPDM Roofing" certifying that each item complies with requirements specified in "Performance Requirements" Article.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.
- B. Warranty: Executed special warranty.

#### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- B. Furnish not less than six 12-foot-long sections of fascia covers, fascia extenders and counterflashings.

#### 1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are FM Approvals listed for specified class and ANSI/SPRI ES-1 tested to specified design pressure.

- B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Division 07 Section “EPDM Roofing”.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

#### 1.10 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.
- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

#### 1.11 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Division 07 Section “EPDM Roofing”.
- B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Delta E units when tested according to ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

- B. FM Approvals' Listing: Manufacture and install roof-edge specialties that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-90. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install roof-edge specialties tested and certified according to ANSI/SPRI ES-1 (Test Methods RE-1, RE-2, and RE-3, as applicable) to comply with the Building Code of New York State which references ASCE/SEI 7, and capable of meeting the wind load design criteria indicated on the Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

## 2.2 ROOF-EDGE SPECIALTIES

- A. Canted Roof-Edge Fascia: Manufactured, roof-edge fascia system with a snap-on metal fascia cover in longest uniform section lengths not exceeding 12 feet. Provide matching corner units and fascia sumps.
  - 1. Provide one of the following types of canted roof-edge fascia systems to meet wind speed requirements or to comply with roofing system manufacturer's warranty requirements:
    - a. Two-Piece Canted Roof-Edge Fascia: Two-piece fascia system with a continuous formed galvanized steel sheet cant, 0.028 inch thick (24 gage), minimum, with extended vertical leg terminating in a drip edge cleat.
      - 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) Carlisle SynTec Systems; SecurEdge 200 Fascia System.
        - b) Firestone Building Products Company, LLC; EdgeGard +.
        - c) Johns Manville; Fascia System 200.
    - b. Three-Piece Canted Roof Edge Fascia: Three-piece fascia system with a continuous extruded aluminum anchor bar with extended vertical leg terminating in a drip edge cleat and continuous formed galvanized steel sheet canted waterdam, 0.028 inch thick (24 gage), minimum.
      - 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) Carlisle SynTec Systems; SecurEdge 2000 Canted Fascia.
        - b) Firestone Building Products Company, LLC; AnchorGard Canted Fascia.

- c) Johns Manville; Presto-Tite Canted Fascia.
2. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, not less than 0.050 inch thick and as required to meet performance requirements.
    - a. Surface: Smooth, flat finish.
    - b. Finish: Two-coat fluoropolymer.
    - c. Color: 'Dark Bronze' to match existing as selected by Architect from manufacturer's full range.
    - d. Separate colors may be selected for each building.
  3. Corners: Factory mitered and continuously welded, not less than 2 feet long in each direction.
  4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
  5. Radius lengths: Provide factory fabricated radius lengths as required to match radius of substrate (verify in field).
  6. Fascia Accessories: Provide the following from the fascia system manufacturer:
    - a. Fascia Extenders: Manufactured, two-piece fascia extender with metal fascia extension in longest uniform section lengths practical not exceeding 12 feet and continuous formed galvanized steel sheet hold-down cleats, 0.028 inch thick (24 gage), minimum, with extended vertical leg terminating in a drip edge cleat. Provide matching corner units.
      - 1) Formed Aluminum: Not less than 0.050 inch thick, with pre-punched slotted holes at 12 inches o.c. at top edge, finished to match fascia cover.
      - 2) Corners: Factory mitered and continuously welded, not less than 2 feet long in each direction.
      - 3) Splice Plates: Concealed, of same material, finish, and shape as fascia extension.
    - b. Soffit Trim: Manufactured metal trim as indicated on Drawings, of same material and finish as fascia cover.
    - c. Fascia Sumps: Manufactured fascia sumps integrated into fascia system, complete with outlet tube that nests into upper end of downspout.
      - 1) Formed Aluminum: Not less than 0.050 inch thick, finished to match fascia cover.
      - 2) Size: As indicated on Drawings.
    - d. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal brackets mounted at rear of downspout, from same material as downspouts, and stainless steel anchors.
      - 1) Formed Aluminum: Not less than 0.063 inch thick, finished to match fascia cover.
      - 2) Size: As indicated on Drawings.

## 2.3 ROOF-EDGE DRAINAGE SYSTEMS

- A. Gutters: Manufactured in longest uniform section lengths not exceeding 12 feet, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish expansion joints and expansion-joint covers fabricated from same metal as gutters.
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. Carlisle SynTec Systems; SecurEdge 200 Industrial Gutter System IG-1.
    - b. Firestone Building Products Company, LLC; Firestone Industrial Gutter FS-1.
    - c. Johns Manville; Johns Manville Industrial Gutter IG-1.
  2. Aluminum Sheet: Not less than 0.063 inch thick.
  3. Corners: Factory mitered and continuously welded, not less than 2 feet long in each direction.
  4. Gutter Supports: Straps with finish matching the gutters.
- B. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal brackets mounted at rear of downspout, from same material as downspouts, and stainless steel anchors.
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. Carlisle SynTec Systems; SecurEdge 200 Industrial Downspout Closed Face.
    - b. Firestone Building Products Company, LLC; Firestone Industrial Closed Face.
    - c. Johns Manville; Johns Manville Industrial Downspout Closed Face.
  2. Formed Aluminum: Not less than 0.063 inch thick.
  3. Size: As indicated on Drawings.
- C. Aluminum Finish: Two-coat fluoropolymer.
1. Surface: Smooth, flat finish.
  2. Color: 'Dark Bronze' to match existing as selected by Architect from manufacturer's full range.
  3. Separate colors may be selected for each building.
- D. Splashblocks:
1. Precast Concrete Type: Factory-made units from a plant regularly engaged in producing precast concrete units. Provide units with minimum 5000 psi compressive strength, with reinforcement required for handling of units, edged on three sides, with one open end.
    - a. Size: Not less than 24 inches long by 12 inches wide by 3 inches high, unless otherwise indicated.
  2. Rubber Type: Provide units of black recycled rubber, edged on three sides, with one open end.

- a. Basis-of-Design Product: Subject to compliance with requirements, provide TPC (The Park and Facilities Catalog); Downspout Splash Blocks, or comparable product.
- b. Size: Not less than 34 inches long by 12 inches wide by 3 inches high, unless otherwise indicated.

## 2.4 ROOF DRAIN INSERTS

- A. Roof Drain Inserts: One-piece spun aluminum body and heavy duty cast aluminum clamping ring and strainer dome roof drain insert, factory fabricated fixture designed to be installed inside an existing drain leader with no reduction in size.
  1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
    - a. Carlisle Syntec, Inc: Carlisle Hercules Retrofit Insert Drain.
    - b. Firestone Building Products: Firestone Drain Insert.
    - c. Johns Manville, Inc: Hercules RetroDrain.

## 2.5 COUNTERFLASHINGS

- A. One-Piece Counterflashings: Manufactured units formed of single counterflashing sections.
  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. Carlisle SynTec Systems; SecurEdge Counter Flashing 1 Pc. Reglet.
    - b. Firestone Building Products Company, LLC; 1 Piece Counter Flashing Reglet Version.
    - c. Metal-Era LLC; 1 Piece Counter Flashing Reglet Version.
  2. Formed Aluminum: Not less than 0.050 inch thick.
  3. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in longest uniform section lengths not exceeding 12 feet and compress against base flashings with joints lapped.
    - a. Surface-Mounted Type: Provide counterflashing with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
    - b. Reglet Type: For embedment in masonry mortar joints.
- B. Two-Piece Counterflashings: Manufactured units formed to provide secure interlocking of separate receiver and counterflashing pieces.
  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. Carlisle SynTec Systems; SecurEdge 2 Pc. Counter Flashing Reglet.

- b. Firestone Building Products Company, LLC; 2 Piece Counter Flashing Reglet Version.
  - c. Metal-Era LLC; 2 Piece Counter Flashing Reglet Version.
2. Formed Aluminum: Not less than 0.050 inch thick.
  3. Surface-Mounted Receivers: Provide receivers with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
  4. Embedded Receivers: For embedment in masonry mortar joints.
  5. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in longest uniform section lengths not exceeding 12 feet designed to snap into receiver and compress against base flashings with joints lapped.
- C. Aluminum Finish: Two-coat fluoropolymer.
1. Surface: Smooth, flat finish.
  2. Color: 'Dark Bronze' to match existing as selected by Architect from manufacturer's full range.
  3. Separate colors may be selected for each building.

## 2.6 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 coating designation.
- B. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
- C. Aluminum Extrusions: ASTM B221, alloy and temper recommended by manufacturer for type of use and finish indicated.

## 2.7 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
  1. Exposed Penetrating Fasteners: Not permitted.
  2. Fasteners for Aluminum: Series 300 stainless steel.
  3. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel.
- B. Elastomeric Sealant: ASTM C920, elastomeric polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.

## 2.8 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Coil-Coated Aluminum Sheet Finishes:
  - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

## 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. Examine walls, parapets, and roof edges for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.
- E. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION, GENERAL

- A. Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
  - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Provide uniform, neat seams with minimum exposure of sealant.
  - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
  - 4. Torch cutting of roof specialties is not permitted.
  - 5. Do not use graphite pencils to mark metal surfaces.

- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by isolating surfaces with adhered EPDM membrane or by other permanent separation as recommended by manufacturer.
  - 1. Underlayment: Where installing metal directly on cementitious or wood substrates, install a course of adhered EPDM membrane sheet underlayment.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
  - 1. Space movement joints at a maximum of 12 feet with no joints within 24 inches of corners or intersections unless otherwise indicated on Drawings.
  - 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
  - 3. Loose-nail fascia extender at center of pre-punched slotted hole; do not draw nail tight.
  - 4. Stagger joints in fascia from those in fascia extender by not less than 24 inches.
- D. Fastener Sizes: Use fasteners of sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.

### 3.3 INSTALLATION OF ROOF-EDGE SPECIALITIES

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners over fully adhered EPDM field membrane extended vertically to bottom of fascia.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
- C. Install fascia extender cover cleat with provisions for expansion and fasteners loose in slotted holes.
- D. Strip-in cleat with adhered EPDM membrane flashing up and over cant dam, installed as indicated on Drawings prior to installation of fascia cover.

### 3.4 INSTALLATION OF ROOF-EDGE DRAINAGE-SYSTEM

- A. Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Fascia Sumps: Install Fascia sumps to match adjacent fascias in tapered sump to allow for proper drainage from roof into fascia sump.
  - 1. Provide secure watertight connection between fascia sump and downspout.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.

1. Provide elbows at base of downspouts to direct water away from building.
  - a. Install splashblocks where downspouts discharge onto roof surfaces, grade or at other locations indicated.

### 3.8 INSTALLATION OF ROOF DRAIN INSERTS

#### A. Roof Drain Insert Installation:

1. Prior to installation, verify existing roof drain is functioning properly. Rod, snake, clean and flush existing drain and piping as required for proper operation.
2. Remove existing dome strainer, clamping ring and hardware, thoroughly hone and clean existing roof drain bowl and piping prior to roof drain insert installation.
3. Install roof drain inserts according to manufacturer's written installation instructions.

### 3.5 INSTALLATION OF COUNTERFLASHINGS

- A. Coordinate installation of counterflashings with installation of base flashings.
- B. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches and bed with butyl sealant. Fit counterflashings tightly to base flashings.
- C. Coordinate installation of two-piece counterflashings with masonry installer.

### 3.6 CLEANING AND PROTECTION

- A. Clean all surfaces, clean off excess sealants.
- B. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- C. Replace roof specialties that have been damaged or that cannot be successfully restored by finish touchup or similar minor restoration procedures.

END OF SECTION 07 71 00

## **SECTION 07 72 00 - ROOF ACCESSORIES**

### 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. Roof curbs.
  - 2. Equipment supports.
  - 3. Roof hatches.
  - 4. Fixed ladder safety railing systems.
  - 5. Movable safety railing systems.
  - 6. Pipe, conduit and duct supports.
  - 7. Vent pipe extensions.
  - 8. Storm collars.
  - 9. Isolation barrier membrane.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Meet with Owner, Architect, roofing Installer, Installer, and installers whose work interfaces with or affect roof accessories.
  - 2. Review special roof details, roof drainage, and conditions of other construction that will affect roof accessories.

#### 1.4 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.
- C. Coordinate construction operations on or adjacent to roof, included in different Sections, which depend on each other for proper installation, connection, and operation.

## 1.5 SUBMITTALS, GENERAL

- A. General: Submit all action submittals required by this Section concurrently.

## 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  - 1. Roof curbs.
  - 2. Equipment supports.
  - 3. Roof hatches.
  - 4. Fixed ladder safety railing systems.
  - 5. Movable safety railing systems.
  - 6. Adjustable-height roller-bearing pipe and conduit supports.
  - 7. Hanger-type pipe and conduit supports.
  - 8. Vent pipe extensions.
  - 9. Storm collars.
  - 10. Isolation barrier membrane.
- B. Shop Drawings: For roof accessories.
  - 1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions.

## 1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

### 2.2 ROOF CURBS

- A. Roof Curbs: Internally reinforced roof-curb units capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings, bearing continuously on roof structure, and capable of meeting performance requirements; with welded or mechanically fastened and sealed corner joints, straight sides, and integrally formed deck-mounting flange at perimeter bottom.

1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
  - a. Conn-Fab Sales, Inc.; Series 4000.
  - b. Pate Company (The); PC-2.
  - c. Thybar Corporation; TC-3.
- B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
- C. Material: Zinc-coated (galvanized) steel sheet, 0.052 inch thick (18 gage).
- D. Construction:
  1. Curb Profile: Manufacturer's standard compatible with roofing system.
  2. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
  3. Top Surface: Level top of curb.
  4. Insulation: Factory insulated with 1-1/2-inch-thick glass-fiber board insulation.
    - a. R-Value: 6.0 according to ASTM C1363.
  5. Liner: Same material as curb, of manufacturer's standard thickness and finish.
  6. Nailer: Factory-installed wood nailer along top flange of curb, continuous around curb perimeter.
  7. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb, of size and spacing required to meet wind uplift requirements.

## 2.3 EQUIPMENT SUPPORTS

- A. Equipment Supports: Rail-type metal equipment supports capable of supporting superimposed live and dead loads between structural supports, including equipment loads and other construction indicated on Drawings, spanning between structural supports; capable of meeting performance requirements; with welded corner joints, and integrally formed structure-mounting flange at bottom.
  1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
    - a. Conn-Fab Sales, Inc.; Series 300.
    - b. Pate Company (The); ES-2.
    - c. Thybar Corporation; TEMS-3.
  - B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.
  - C. Material: Zinc-coated (galvanized) steel sheet, 0.052 inch thick (18 gage).
  - D. Construction:

1. Curb Profile: Manufacturer's standard compatible with roofing system.
2. Nailer: Factory-installed continuous wood nailers 5-1/2 inches wide on top flange of equipment supports, continuous around support perimeter.
3. Wind Restraint Straps and Base Flange Attachment: Provide wind restraint straps, welded strap connectors, and base flange attachment to roof structure at perimeter of curb of size and spacing required to meet wind uplift requirements.
4. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as equipment support.
5. Fabricate equipment supports to minimum height of 12 inches above roofing surface unless otherwise indicated.

## 2.4 ROOF HATCHES

- A. Roof Hatches: Thermally-broken metal roof-hatch units with insulated double-walled lids and insulated single-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, straight sides, and integrally formed deck-mounting flange at perimeter bottom.
  1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
    - a. Babcock-Davis; ThermalMAX BRHTA36X30.
    - b. Bilco Company (The); Type S-50TB.
    - c. Nystrom; ThermalMAX RHTA36X30.
- B. Type and Size: Single-leaf lid, 30 by 36 inches (verify existing opening dimensions in field).
- C. Loads: Minimum 40-lbf/sq. ft. external live load and 20-lbf/sq. ft. internal uplift load.
- D. Material: Aluminum sheet.
  1. Thickness: 0.090 inch.
  2. Finish: Mill.
- E. Construction:
  1. Curb and Hatch Lid Insulation: 3-inch-thick, polyisocyanurate board.
    - a. R-Value: 20.0 according to ASTM C1363.
  2. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
  3. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
- F. Hardware: Spring operators, hold-open arm, galvanized steel spring latch with turn handles, stainless steel butt- or pintle-type hinge system, and padlock hasps inside and outside.
- G. Roof-Hatch Safety Railing System: Roof-hatch manufacturer's standard system including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete

installation; attached to roof hatch and complying with OSHA requirements and authorities having jurisdiction.

1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
  - a. Babcock-Davis; SRBAY36X30FG.
  - b. Bilco Company (The); BIL-Guard 2.0, RL2-STB.
  - c. Nystrom; SRBAY36X30FG.
2. Height: 42 inches above finished roof deck.
3. Posts and Rails: Aluminum pipe, Schedule 40, 1-1/4 inches in diameter.
4. Maximum Opening Size: System constructed to prevent passage of a sphere 21 inches in diameter.
5. Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.
6. Post and Rail Tops and Ends: Weather resistant, closed or plugged with prefabricated end fittings.
7. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members.
8. Fabricate joints exposed to weather to be watertight.
9. Fasteners: Manufacturer's standard.
10. Finish: Powder-coat finish.
  - a. Color: Safety yellow.

## 2.5 MOVABLE SAFETY RAILING SYSTEMS

- A. Movable Safety Railing Systems: Manufacturer's standard system including rails, clamps, fasteners, and accessories required for a complete installation; freestanding, non-penetrating, and complying with OSHA requirements and authorities having jurisdiction.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Safety Rail Company; SRC 360 Mobile Safety Rail System, or a comparable product.
  2. Height: 42 inches above finished roof.
  3. Bases: Cast iron with EPDM pad, with base mover/dolly.
  4. Posts and Rails: Steel tube, not less than 0.064-inch-thick (16 gage), 1-5/8 inches in diameter.
  5. Maximum Opening Size: System constructed to prevent passage of a sphere 21 inches in diameter.
  6. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members.
  7. Fabricate joints exposed to weather to be watertight.
  8. Fasteners: Manufacturer's standard.
  9. Finish: Hot dip galvanized finish.

## 2.6 FIXED LADDER SAFETY RAILING SYSTEMS

- A. Fixed Ladder Safety Railing Systems: Manufacturer's standard clamp-on system including rails, clamps, fasteners, safety gate at railing opening, and accessories required for a complete installation; freestanding, non-penetrating, and complying with OSHA requirements and authorities having jurisdiction.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Safety Rail Company; Ladderguard Lite 15 Fixed Ladder Guarding System, or a comparable product.
  2. Height: 42 inches above finished roof.
  3. Bases: Freestanding railing holders.
  4. Posts and Rails: Steel tube, not less than 0.064-inch-thick (16 gage), 1-5/8 inches in diameter.
  5. Spanner Brackets: Steel brackets to span gap between safety railing system and ladder rails.
  6. Maximum Opening Size: System constructed to prevent passage of a sphere 21 inches in diameter.
  7. Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.
  8. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members.
  9. Fabricate joints exposed to weather to be watertight.
  10. Fasteners: Manufacturer's standard.
  11. Finish: Hot dip galvanized finish.

## 2.7 PIPE AND CONDUIT SUPPORTS

- A. Adjustable-Height Roller-Bearing Pipe and Conduit Supports: Pipe stand base, pipe support, and roller housing, with stainless steel threaded rod designed for adjusting support height, accommodating up to 6 inch diameter pipe or conduit; with pipe guide; for penetration-free installation over roof membrane type; as required for load and quantity of pipe or conduit runs and sizes.
1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:
    - a. Miro Industries, Inc.; Roller Series Supports.
    - b. PHP Systems & Design; Type PP10 with Roller for up to 6" diameter pipe.
  2. Base: Molded polypropylene or polycarbonate.
  3. Maximum Height: 12 inches above roof (verify existing pipe heights in field).
- B. Hanger-Type Pipe and Conduit Supports: H-frame assembly of bases, vertical and horizontal hot-dip galvanized-steel members and hanger-type pipe supports, for penetration-free installation over roof membrane type; sized as required for load and quantity of pipe or conduit runs and sizes, and indicated clearance height above roof.
1. Products: Subject to compliance with requirements, available products that may be incorporated in the Work, include, but are not limited to:

- a. Miro Industries, Inc.; Custom Hanger Supports.
  - b. PHP Systems & Design; Type PSE-Custom.
  - c. Rooftop Support Systems, a division of Eberl Iron Works, Inc.; RTS H Stands.
- 2. Bases: Vulcanized rubber, molded polypropylene, or polycarbonate.
  - 3. Pipe Supports: Clevis hanger with continuous-thread rod.

## 2.8 VENT PIPE EXTENSIONS

- A. Vent Pipe Extensions: Prefabricated plumbing vent pipe extensions. Solid-wall PVC pipe with integral six-inch-long joint splice sleeve insert at each end. Verify existing pipe size in field.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Tubos, Inc.; TUBOS Vent Pipe Extensions, or a comparable product.

## 2.9 STORM COLLARS

- A. Storm Collars: Not less than 0.0188-inch-thick (26 gage), stainless-steel sheet umbrella with stainless-steel band clamp, installed with heat-resistant sealant.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide SBC Industries; Clamp Umbrella (Storm Collar) – Model UMB, or a comparable product.

## 2.10 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 coating designation.
- B. Aluminum Sheet: ASTM B209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
  - 1. Mill Finish: As manufactured.
- C. Aluminum Extrusions and Tubes: ASTM B221, manufacturer's standard alloy and temper for type of use, finished as indicated; otherwise mill finished.
  - 1. Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
- D. Stainless Steel Sheet and Shapes: ASTM A240/A240M or ASTM A666, Type 304.

## 2.11 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Glass-Fiber Board Insulation: ASTM C726, nominal density of 3 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F, thickness as indicated.

- C. Polyisocyanurate Board Insulation: ASTM C1289, thickness and thermal resistivity as indicated.
- D. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1-1/2 inches thick.
- E. Isolation Barrier Membrane: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber compound, bonded to a polypropylene film to produce an overall thickness of not less than 0.014 inch.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide GCP Applied Technologies, Inc.; Vycor PRO, or comparable product.
- F. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
  - 1. Fasteners for Zinc-Coated Steel: Series 300 stainless steel.
  - 2. Fasteners for Aluminum Sheet: Series 300 stainless steel.
- G. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- H. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.

## 2.12 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.
- E. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION

- A. Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Install isolation barrier membrane between metal and wood blocking, wrinkle free. Apply primer if required by membrane manufacturer. Use primer rather than nails for installing membrane at low temperatures. Overlap edges not less than 3-1/2 inches. Roll laps with roller. Cover membrane within 14 days.
- C. Roof Curb Installation: Install each roof curb so top surface is level.
- D. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.
- E. Roof-Hatch Installation:
  - 1. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
  - 2. Attach safety railing system to roof-hatch curb.
- F. Fixed Ladder Safety Railing System Installation: Assemble in place to verify that components are complete. Instruct Owner's designated personnel in properly handling, adjusting, and maintaining units.
- G. Movable Safety Railing System Installation: Assemble in place to verify that components are complete. Instruct Owner's designated personnel in properly handling, adjusting, and maintaining units.
- H. Pipe Support Installation: Comply with MSS SP-58 and MSS SP-89. Install supports and attachments as required to properly support piping. Arrange for grouping of parallel runs of horizontal piping, and support together.
  - 1. Pipes of Various Sizes: Space supports for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.

2. Install pipe and conduit supports over adhered flexible walkway pads.

- I. Vent Pipe Extension Installation: Install prefabricated vent pipe extensions according to manufacturer's written installation instructions.
- J. Storm Collar Installation: Install storm collars according to manufacturer's written installation instructions.
- K. Seal joints with elastomeric sealant as required by roof accessory manufacturer.

### 3.3 CORRECTION AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A780/A780M.
- B. Clean exposed surfaces according to manufacturer's written instructions.
- C. Clean off excess sealants.
- D. Replace roof accessories that have been damaged or that cannot be successfully restored by finish touchup or similar minor correction procedures.

END OF SECTION 07 72 00

## 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 (except Samples for Verification) required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- 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. Cylindrical sealant backings.
  - 2. Bond-breaker tape.
  - 3. Primer.
  - 4. Cleaners for nonporous surfaces.
  - 5. Silicone, S, NS, 100/50, NT sealant.
- C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each product exposed to view.
- D. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- 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.
- F. Sample Warranties: For special warranties.

## 1.5 CLOSEOUT SUBMITTALS

- A. Warranties: Executed special warranties.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- B. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

## 1.7 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.

## 1.8 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  - 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  - 2. Disintegration of joint substrates from causes exceeding design specifications.
  - 3. Mechanical damage caused by individuals, tools, or other outside agents.
  - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## PART 2 - PRODUCTS

### 2.1 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, S, NS, 100/50, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, 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; 890 NST.
    - d. Tremco Incorporated; Spectrem 1.
  - 2. Joint-Sealant Application: Exterior joints in vertical and horizontal surfaces.
    - a. Exterior Joint Locations:
      - 1) Joints between metal and metal and masonry.
      - 2) Other joints as indicated.

### 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 C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.4 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 C 1193 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 C 1193 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 repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00

## SECTION 08 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

### 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. Storefront framing.
  - 2. Flush entrance doors.

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals and informational submittals required by this Section and by Division 08 Sections "Door Hardware" concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
  - 1. Entrance door hardware.
  - 2. Accessories.
- 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 Division 01 Section "Submittal Procedures") for each item listed below, otherwise submit full Product Data for the following:
  - 1. Flush entrance doors.
- C. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
  - 1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
  - 2. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
  - 3. Show provisions for coordination with door hardware.
- D. Samples: For each type of exposed finish required, in manufacturer's standard sizes.

- E. Delegated-Design Submittal: For aluminum-framed entrances and storefronts indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- F. Warranties: Sample of Project-specific special warranties.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Energy Performance Certificates: For aluminum-framed entrances and storefronts, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Energy performance values for each exterior aluminum-framed entrance and storefront meeting specified NFRC requirements.
- B. Performance Reports: For FRP doors, showing compliance with fire-performance and door construction requirements.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For aluminum-framed entrances and storefronts to include in maintenance manuals.
- B. Warranties: Executed special warranties.

#### 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
  - 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.

#### 1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures, including, but not limited to, excessive deflection.
    - b. Noise or vibration created by wind and thermal and structural movements.

- c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - d. Water penetration through fixed glazing and framing areas.
  - e. Failure of operating components.
2. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain all components of aluminum-framed entrance and storefront system, including framing and accessories, and entrance doors when available, from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Division 01 Section "Quality Requirements," to design aluminum-framed entrances and storefronts.
- B. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.
  - 1. Aluminum-framed entrances and storefronts shall withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
  - 2. Failure also includes the following:
    - a. Thermal stresses transferring to building structure.
    - b. Noise or vibration created by wind and thermal and structural movements.
    - c. Loosening or weakening of fasteners, attachments, and other components.
    - d. Failure of operating units.
- C. Structural Loads:
  - 1. Wind Speed:
    - a. Ultimate design wind speed (3-second gust) as indicated on Drawings.
    - b. Nominal design wind speed (3-second gust) as indicated on Drawings.
  - 2. Wind Loads: As indicated on Drawings.
  - 3. Other Loads: As indicated on Drawings.
- D. Deflection of Framing Members: At design wind pressure, as follows:

1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus ¼ inch for spans of greater than 13 feet 6 inches. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.
  - a. Operable Units: Provide a minimum 1/16-inch clearance between framing members and operable units.
- E. Structural: Test according to ASTM E 330/E 330M as follows:
  1. When tested at positive and negative wind-load design pressures, storefront assemblies, including entrance doors, do not evidence deflection exceeding specified limits.
  2. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including entrance doors and anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
  3. Test Durations: As required by design wind velocity, but not less than 10 seconds.
- F. Air Infiltration: Test according to NFRC 400 or ASTM E 283 for infiltration as follows:
  1. Exterior Fixed Framing:
    - a. Maximum air leakage of 0.06 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft.
  2. Exterior Entrance Doors:
    - a. Single Doors: Maximum air leakage of 1.0 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft.
- G. Water Penetration under Static Pressure: Test according to ASTM E 331 as follows:
  1. No evidence of water penetration through exterior framing areas, including entrance doors, when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 10 lbf/sq. ft.
- H. Energy Performance: Certify and label energy performance according to NFRC as follows:
  1. Thermal Transmittance (U-factor): NFRC 100 maximum U-factor as follows:
    - a. For exterior framing areas as a system: 0.38 Btu/sq. ft. x h x deg F.
    - b. For exterior entrance doors: 0.77 Btu/sq. ft. x h x deg F.
  2. Solar Heat Gain Coefficient (SHGC): Exterior fixed glazing and framing areas as a system shall have SHGC of no greater than 0.40 as determined according to NFRC 200.
- I. Condensation Resistance: Exterior fixed glazing and framing areas as a system shall have a condensation resistance factor (CRF) of no less than 60 as determined according to AAMA 1503.

- J. Windborne-Debris Impact Resistance: Pass missile-impact and cyclic-pressure tests according to ASTM E 1996 for Wind Zone 1 Enhanced.
  - 1. Large-Missile Test: For exterior glazed openings located within 30 feet of grade.
  - 2. Small-Missile Test: For exterior glazed openings located more than 30 feet above grade.
- K. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

## 2.3 STOREFRONT SYSTEMS, GENERAL

- A. Types: Provide the following storefront system types in locations indicated on Drawings:
  - 1. Thermally Broken Exterior Framing.
- B. Framing Members: Manufacturer's extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
  - 1. Finish: Dark Bronze anodic finish.
  - 2. Fabrication Method: Field-fabricated stick system.
  - 3. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
  - 4. Steel Reinforcement: As required by manufacturer.
- C. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.
- D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

## 2.4 THERMALLY BROKEN EXTERIOR FRAMING – 6-INCH WIDTH

- A. Products: Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to:
  - 1. EFCO Corporation; Xtherm Series 406X.
  - 2. Kawneer; Trifab 601UT.
  - 3. Special-Lite, Inc.; SL-600 TB.
  - 4. YKK AP America Inc.; YES 60 XT.
- B. Framing Size: 2-inch by 6-inch (Locations as indicated on Drawings).

## 2.5 ENTRANCE DOOR SYSTEMS, GENERAL

- A. Types: Provide the following entrance door types in locations indicated on Drawings:

1. Flush Entrance Doors.
- B. Flush Entrance Doors: Manufacturer's flush entrance doors for swing operation.
1. Door Construction: 0.120-inch-thick pebble-textured fiberglass reinforced polyester (FRP) face sheet with poured-in-place or frothed-in-place urethane insulation and interlocked into extruded-aluminum rail and stile members to conceal edges of face sheets.
    - a. FRP door construction must comply with IBC 2603.4.1.7 or have special approval per IBC 2603.9.
  2. Surface-Burning Characteristics: For FRP face sheets facing the interior, surface-burning characteristics as follows when tested by a qualified testing agency according to ASTM E 84. Identify products with appropriate markings of applicable testing agency.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.
  3. Color and Gloss: As selected by Architect from manufacturer's full range including "Gray" to match existing doors.

## 2.6 FLUSH ENTRANCE DOORS

- A. Products: Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to:
1. FRP Architectural Doors Inc.; FD25 Heavy Duty FRP Faced Door.
  2. Special-Lite, Inc.; SL-17 Pebble Grain FRP/ Aluminum.
- B. Depth: 1-3/4-inch.

## 2.7 ENTRANCE DOOR HARDWARE

- A. Entrance Door Hardware: Hardware not specified in this Section is specified in Division 08 Section "Door Hardware."
- B. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule for each entrance door, to comply with requirements in this Section.
1. Opening-Force Requirements:
    - a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.
    - b. Accessible Interior Doors: Not more than 5 lbf to fully open door.
- C. Weather Stripping: Manufacturer's standard replaceable components.

1. Compression Type: Made of ASTM D 2000 molded neoprene or ASTM D 2287 molded PVC.
  2. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.
- D. Weather Sweeps: Manufacturer's standard adjustable exterior-door bottom sweep with concealed fasteners on mounting strip.
- E. Pulls: Provide exterior recessed pull.

## 2.8 MATERIALS

- A. Sheet and Plate: ASTM B 209.
- B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
- C. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
- D. Structural Profiles: ASTM B 308/B 308M.
- E. Steel Reinforcement:
1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
  2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
  3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.
  4. Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM, and prepare surfaces according to applicable SSPC standard.

## 2.9 ACCESSORIES

- A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
  2. Reinforce members as required to receive fastener threads.
- B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.
1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123/A 123M or ASTM A 153/A 153M requirements.

- C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.
- D. Bituminous Paint: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil thickness per coat.

## 2.10 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Fabricate components that, when assembled, have the following characteristics:
  - 1. Profiles that are sharp, straight, and free of defects or deformations.
  - 2. Accurately fitted joints with ends coped or mitered.
  - 3. Physical and thermal isolation of glazing from framing members.
  - 4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
  - 5. Provisions for field replacement of glazing from interior.
  - 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
  - 1. At exterior doors, provide compression weather stripping at surface-applied fixed stops. Blade-type stops are not acceptable.
- E. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
  - 1. At exterior doors, provide weather sweeps applied to door bottoms.
- F. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
  - 1. Provide exterior recessed pull.
- G. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

## 2.11 ALUMINUM FINISHES

- A. Dark Bronze Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
  - 1. Typical for all aluminum components at door and frame.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Beginning installation constitutes Contractor's acceptance of substrates and conditions.

### 3.2 INSTALLATION

#### A. General:

- 1. Comply with manufacturer's written instructions.
- 2. Do not install damaged components.
- 3. Fit joints to produce hairline joints free of burrs and distortion.
- 4. Rigidly secure nonmovement joints.
- 5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
- 6. Seal perimeter and other joints watertight unless otherwise indicated.

#### B. Metal Protection:

- 1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
- 2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

#### C. Set continuous sill members and flashing in full sealant bed, as specified in Division 07 Section "Joint Sealants," to produce weathertight installation.

#### D. Install components plumb and true in alignment with established lines and grades.

#### E. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

#### F. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

- 1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
- 2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

### 3.3 ERECTION TOLERANCES

- A. Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum tolerances:
1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.
  2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.
  3. Alignment:
    - a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
    - b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
    - c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/4 inch.
  4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

### 3.4 MAINTENANCE SERVICE

- A. Entrance Door Hardware:
1. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.

END OF SECTION 08 41 13

## **SECTION 087100 – DOOR HARDWARE**

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
  - 1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
  - 1. Mechanical door hardware.
  - 2. Cylinders specified for doors in other sections.
- C. Related Sections:
  - 1. Division 08 Section “Aluminum-Framed Entrances and Storefronts”.
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
  - 2. ICC/IBC - International Building Code.
  - 3. NFPA 101 - Life Safety Code.
  - 4. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
  - 1. ANSI/BHMA Certified Product Standards - A156 Series
  - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

#### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Warranty information for each product.
  4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

#### 1.4 QUALITY ASSURANCE

- A. **Manufacturers Qualifications:** Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. **Installer Qualifications:** A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. **Door Hardware Supplier Qualifications:** Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- D. **Source Limitations:** Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
- E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- F. **Keying Conference:** Conduct conference to comply with requirements in Division 01 Section "Project Meetings." If needed Keying conference to incorporate the following criteria into the final keying schedule document:
  - 1. Function of building, purpose of each area and degree of security required.
  - 2. Plans for existing and future key system expansion.
  - 3. Requirements for key control storage and software.
  - 4. Installation of permanent keys, cylinder cores and software.
  - 5. Address and requirements for delivery of keys.
- G. **Pre-Submittal Conference:** Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
  - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware for aluminum/FRP doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  - 2. Review sequence of operation narratives for each unique access controlled opening.
  - 3. Review and finalize construction schedule and verify availability of materials.
  - 4. Review the required inspecting, testing, commissioning, and demonstration procedures

- H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

#### 1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

#### 1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
  - 1. Ten years for mortise locks and latches.
  - 2. Seven years for heavy duty cylindrical (bored) locks and latches.
  - 3. Five years for exit hardware.

## 1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
  - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

### 2.2 HANGING DEVICES

- A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
  - 1. Manufacturers:
    - a. Bommer Industries (BO).
    - b. Hager Companies (HA).
    - c. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).

### 2.3 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

- B. Cylinders: Original manufacturer cylinders complying with the following:
1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
  2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
  4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  5. Keyway: Match Facility Standard.
- C. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
1. Removable Cores: Core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware. Provide removable core (small or large format) as specified in Hardware Sets.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
  2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
  3. Existing System: Field verify and key locks to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:
1. Construction Keys (where required): Ten (10).
  2. Construction Control Keys (where required): Two (2).
- F. Construction Keying: Provide temporary keyed construction cores.
- G. Key Registration List (Bitting List):
1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
  2. Provide transcript list in writing or electronic file as directed by the Owner.

## 2.4 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified.
1. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
  2. Locks are to be non-handed and fully field reversible.
  3. Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.2 requirements to 2 million cycles.

4. Manufacturers:
  - a. Corbin Russwin Hardware (RU) – CL3300 Series.
  - b. Sargent Manufacturing (SA) – 10 Line.
  - c. Stanley Best (BE) – 9K Series.

## 2.5 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
  1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
  2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
  3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
  4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
  1. Strikes for Mortise Locks and Latches: BHMA A156.13.
  2. Strikes for Bored Locks and Latches: BHMA A156.2.
  3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
  4. Dustproof Strikes: BHMA A156.16.
    - a. Sargent Manufacturing (SA) - 80 Series.
    - b. Von Duprin (VD) - 35A/98 XP Series.

## 2.6 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
  1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
  2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
  3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
  4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use.

Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
  6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
  7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Manufacturers:
    - a. Corbin Russwin Hardware (RU) - DC6000 Series.
    - b. Sargent Manufacturing (SA) - 351 Series.
    - c. Norton Door Controls (NO) - 7500 Series.

## 2.7 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  1. Manufacturers:
    - a. Burns Manufacturing (BU).
    - b. Hiawatha, Inc. (HI).
    - c. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

## 2.8 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and

provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
  - 1. National Guard Products (NG).
  - 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
  - 3. Reese Enterprises, Inc. (RE).

## 2.9 OPENING LABELS

- A. Provide 1"W x 2"H gloss polyester label imprinted with door mark and QR-type code readable via IR and visible light scan. QR code links to a security credential protected site displaying the installed door opening information. Label constructed with a high-performance, permanent acrylic adhesive resistant to chemicals, smear and scratch, and repeated freeze and thaw cycles. Face stock of label to be white or clear coated, 2.0 mil thickness with tensile strength meeting or exceeding 18,000 psi.
  - 1. Approved Manufacturer: Openings Studio™ Smart Tags (AA).

## 2.10 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

## 2.11 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

### 3.2 INSTALLATION

- A. Install each item of mechanical hardware to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9

Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

### 3.3 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Section "Closeout Procedures" for project punch and reporting requirements including compliance with approved submittals and verification door hardware is properly installed, operating and adjusted.

### 3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

### 3.5 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

### 3.6 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical door hardware.

### 3.7 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with

corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate selection for the material and application.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

### **Hardware Sets**

**Set: 1.0**

Doors: HS/Stage Mechanical Room to Roof

1 Continuous Hinge	CFM_SLF-HD1 x Length Required		PE
1 Storeroom/Closet Lock	64 10G04 LL	US26D	SA
1 Core	By Owner	US15	SA
1 Surface Closer	351 CPS	EN	SA
1 Threshold	273x224AFGT x Length Required x MSES25SS		PE

Notes: Balance of hardware by door assembly provider

END OF SECTION 087100

## **SECTION 09 91 00 – PAINTING**

### 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 surface preparation and application of paint systems, for the following:
  - 1. Interior applications.
    - a. Painting systems indicated on Drawings and in Schedules applied to new and existing interior surfaces and related components including but not limited to items such as hollow metal doors frames, doors, access doors, trim pieces, window sash, trim and previously painted cabinet heater/fin tube enclosures, exposed ductwork etc., unless otherwise indicated, including appropriate surface preparation for all new or existing surfaces to be painted including previously painted surfaces and surfaces with existing wall coverings

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals (except Samples for Verification) and informational submittals required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product for substrates indicated. Include preparation requirements and application instructions. Include all paint products under one cover sheet.
  - 1. Interior steel.
  - 2. Interior steel (deep tone accent colors).
- B. Samples for Verification and Initial Color Selection: For each type of finish system and in each color and gloss of finish indicated.
  - 1. Submit Samples on rigid backing, 8 inches square.
    - a. For wood finishes, submit Samples on representative samples of actual wood substrates, 8 inches square.
  - 2. Step coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.

- C. Product List: For each product indicated, include the following:
  - 1. Cross-reference to finish system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - 2. VOC content. Tints and /or colorant shall add no additional VOC to final product. Provide 3<sup>rd</sup> party certification of VOC content.
  
- D. Coatings Maintenance Manual:
  - 1. Upon conclusion of the project, the contractor or paint manufacture/supplier shall furnish a coatings maintenance manual such as Sherwin Williams “Custodian Project Color and Product Information” report. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions. Touch up procedures and color samples of each color and finish used. All information contained in a self-bound 3 ring hole punched catalog.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For applicator.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint: 10 percent, but not less than 1 gal. of each material and color applied.
  - 2. Stains and Transparent Finishes: 10 percent, but not less than 1 gal. of each material and color applied.

#### 1.7 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual, experienced in applying finishes specified in this Section, who has successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; familiar with special requirements indicated; and with sufficient trained staff to apply manufacturer's products according to specified requirements.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

## 1.9 FIELD CONDITIONS

- A. Apply finishes only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F.
- B. Do not apply finishes when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior finishes in snow, rain, fog, or mist.
- D. Lighting: Do not install finishes until a lighting level of not less than 80 fc is provided on the surfaces to receive finishing.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
  - 1. Benjamin Moore & Co.
  - 2. PPG Architectural Finishes, Inc.
  - 3. Sherwin-Williams Company (The).
- B. Submittals containing manufactures other than stated above, will require a product-by-product comparison for each type of paint. All Comparable equals are to be matched with corresponding Sherwin Williams specified products.
- C. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include but are not limited to products listed in Part 3 articles for the application indicated.

### 2.2 MATERIALS, GENERAL

- A. Material Compatibility:
  - 1. Provide materials for use within each finish system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a finish system, provide products recommended in writing by manufacturers of topcoat for use in finish system and on substrate indicated.
  - 3. Provide products of same manufacturer for each coat in a finish system.
  - 4. "All-in-one" paint and primer products are not acceptable.
- B. VOC Compliance: All paint products shall meet New York requirements for Volatile Organic Compound (VOC) and Ozone Transport Commission (OTC) regulations, January 2005.
- C. Colors: As selected by Architect from manufacturer's full range.

1. 25 percent of surface area will be painted with deep tones.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be finished. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and finishing.
  1. After completing finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- B. Clean substrates of substances that could impair bond of finishes, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce finish systems indicated.
- C. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
  1. SSPC-SP 3, "Power Tool Cleaning."
  2. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."
- D. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- E. Alteration Work: Comply with applicable surface preparation requirements specified and as recommended by finish materials manufacturer for existing surfaces to receive paint or other finishes, including cleaning, sanding, and roughening as required for proper adherence of new finish material.

### 3.3 APPLICATION

- A. Apply finishes according to manufacturer's written instructions.
  - 1. Use applicators and techniques suited for finish and substrate indicated.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4. Do not apply paints over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.
- E. Alterations: Finish new surfaces adjacent to unaltered existing surfaces with finish of same type and surface texture as corresponding adjacent surfaces, unless otherwise indicated. Finish patched, damaged, or extended surfaces to match existing surfaces.
- F. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
  - 1. Paint the following work where exposed in equipment rooms:
    - a. Equipment, including panelboards and switch gear.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Tanks that do not have factory-applied final finishes.
    - h. Duct, equipment, pipe and insulation having cotton or canvas insulation covering or another paintable jacket material.
  - 2. Paint the following work where exposed in occupied spaces:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.

- g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or another paintable jacket material.
  - h. Other items as directed by Architect.
3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner will engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
- 1. Contractor shall touch up and restore painted surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from finish operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced finished surfaces.

### 3.6 INTERIOR PAINTING SCHEDULE

- A. Steel Substrates:
- 1. First Coat:
    - a. Benjamin Moore & Co.; Super Spec HP Acrylic Metal Primer P04.
    - b. PPG Paints: Pitt-Tech Interior/Exterior Industrial DTM Primer/Finish Enamel 90-712.
    - c. Sherwin-Williams Company (The); Pro Industrial DTM Acrylic Primer Finish B66W1.
  - 2. Second and Third Coats (Semi-Gloss):

- a. Benjamin Moore & Co.; Ultra Spec HP DTM Acrylic Semi-Gloss HP29, or Gloss HP28.
- b. PPG Paints: Pitt-Tech Industrial DTM Acrylic Satin 90-474.
- c. Sherwin-Williams Company (The); Pro Industrial DTM Acrylic Coating S/G (B66-W01151 Series) or Gloss (B66-W01051 Series.)

B. Steel Substrates (Deep Tone Accent Colors):

1. First Coat: Use tinted primer.

- a. Benjamin Moore & Co.; Super Spec HP Acrylic Metal Primer P04.
- b. PPG Paints: Pitt-Tech Interior/Exterior Industrial DTM Primer/Finish Enamel 90-712.
- c. Sherwin-Williams Company (The); Pro Industrial DTM Acrylic Primer Finish B66W1.

2. Second and Third Coats (Semi-Gloss): Additional coats may be required.

- a. Benjamin Moore & Co.; Ultra Spec HP DTM Acrylic Semi-Gloss HP29 or Gloss HP28.
- b. PPG Paints: Pitt-Tech Industrial DTM Acrylic Satin 90-474.
- c. Sherwin-Williams Company (The); Pro Industrial DTM Acrylic Coating S/G (B66-W01151 Series) or Gloss (B66-W01051 Series.)

END OF SECTION 09 91 00

## **SECTION 09 96 00 – HIGH-PERFORMANCE COATINGS**

### 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 surface preparation and application of high-performance coating systems, for the following:
  - 1. Exterior applications.
    - a. Painting systems indicated on Drawings and in Schedules applied to new and existing exterior surfaces and related components including but not limited to items such as hollow metal doors frames, doors, access doors, trim pieces, window sash, trim and previously painted cabinet heater/fin tube enclosures, etc., unless otherwise indicated, including appropriate surface preparation for all new or existing surfaces to be painted including previously painted surfaces and surfaces with existing wall coverings

#### 1.3 SUBMITTALS, GENERAL

- A. General: Submit all action submittals (except Samples for Verification) and informational submittals required by this Section concurrently.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product for substrates indicated. Include preparation requirements and application instructions. Include all paint products under one cover sheet.
  - 1. Exterior steel.
  - 2. Exterior steel gas piping.
  - 3. Exterior galvanized metal.
  - 4. Exterior wood.
  - 5. Exterior aluminum.
  - 6. Exterior CMU.
- B. Samples for Verification and Initial Selection: For each type of coating system and in each color and gloss of topcoat indicated.
  - 1. Submit Samples on rigid backing, 8 inches square.
  - 2. Step coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.

4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  2. VOC content.
- D. Coatings Maintenance Manual:
1. Upon conclusion of the project, the contractor or paint manufacture/supplier shall furnish a coatings maintenance manual such as Sherwin Williams "Custodian Project Color and Product Information" report. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions. Touch up procedures and color samples of each color and finish used. All information contained in a self-bound 3 ring hole punched catalog.

#### 1.5 QUALITY ASSURANCE

- A. Qualification Data: For applicator.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Coatings: 10 percent, but not less than 1 gal. of each material and color applied.

#### 1.7 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual, experienced in applying high performance coatings specified in this Section, who has successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; familiar with special requirements indicated; and with sufficient trained staff to apply manufacturer's products according to specified requirements.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
1. Maintain containers in clean condition, free of foreign materials and residue.
  2. Remove rags and waste from storage areas daily.

## 1.9 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.
- D. Lighting: Do not install high-performance coatings until a lighting level of not less than 80 fc is provided on the surfaces to receive coating.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
  - 1. Benjamin Moore & Co.
  - 2. Sherwin-Williams Company (The).
  - 3. Tnemec Inc.
- B. Submittals containing manufactures other than stated above, will require a product by product comparison for each type of paint. All Comparable equals are to be matched with corresponding Sherwin Williams's specified products.
- C. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include but are not limited to products listed in Part 3 articles for the application indicated.

### 2.2 HIGH PERFORMANCE COATINGS, GENERAL

- A. Material Compatibility:
  - 1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.
  - 3. Provide products of same manufacturer for each coat in a coating system.
  - 4. "All-in-one" paint and primer products are not acceptable.

- B. VOC Compliance: Provide exterior coating products complying with New York requirements for Volatile Organic Compound (VOC) and Ozone Transport Commission (OTC) regulations, January 2005.
- C. Colors: As selected by Architect from manufacturer's full range.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
    - a. Concrete: 12 percent.
    - b. Masonry (Clay and CMU): 12 percent.
    - c. Wood: 15 percent.
- B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- B. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- C. Masonry Substrates: Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  2. SSPC-SP 10/NACE No. 2, "Near-White Blast Cleaning."
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal using bio-degradable detergent. Then abrasive blast with fine abrasive to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
- G. Aluminum Substrates: Remove loose surface oxidation by scarification.
- H. Wood Substrates:
1. Scrape and clean knots. Before applying primer apply coat of knot sealer recommended in writing by topcoat manufacturer for coating system indicated.
  2. Sand surfaces that will be exposed to view and dust off.
  3. Prime edges, ends, faces, undersides, and back sides of wood.
  4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- I. Galvanized Metal/Galvanized Deck- Factory Primed Surface: Coordinate with approved paint manufacturer on compatibility of paint finish coats to factory prime surface.
- J. After removing all surface contamination, the surface should be scuff sanded or scrubbed with an abrasive cleaner to dull the surface for best adhesion.

### 3.3 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions.
1. Use applicators and techniques suited for coating and substrate indicated.
  2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
  3. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

- D. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

### 3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner will engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
  - 1. Contractor shall touch up and restore coated surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

### 3.6 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Steel Substrates:
  - 1. First Coat:
    - a. Benjamin Moore & Co. (No Zinc primers) suggest Corotech V160 Epoxy Mastic Coating @4.6-7.2 DFT.
    - b. Sherwin-Williams Company (The); Corothane 1 Gal-Va-Pac Zinc Primer B65G00010 at 3.0-4.0 mils DFT.
    - c. Tnemec Inc.; Series 90-97 Tneme-Zinc at 2.5 to 3.5 mils DFT.
  - 2. Second Coat:
    - a. Benjamin Moore & Co. Corotech V160 Epoxy Mastic Coating @4.6-7.2 DFT
    - b. Sherwin-Williams Company (The); Macropoxy 646 B58 series 7.0-5.0 mils DFT
    - c. Tnemec Inc.; Series 66HS Hi-Build Epoxoline at 3.0 to 5.0 mils DFT.

3. Third Coat:
    - a. Benjamin Moore & Co. Corotech V500 Acrylic Aliphatic Urethane Coating Gloss or V510 Acrylic Aliphatic Urethane Coating Semi-Gloss at 3.2-4.6 mils DFT
    - b. Sherwin-Williams Company (The); Hi Solids Polyurethane B65 series 4.5-3.0 mils DFT
    - c. Tnemec Inc.; Series 1074 or 1095 Endura-Shield II at 2.0 to 5.0 mils DFT.
- B. Steel Substrates: Black Steel Gas Piping – above ground.
1. First Coat:
    - a. Benjamin Moore & Co. Corotech V160 Surface Tolerant Epoxy Mastic (4.6–7.2).
    - b. Sherwin-Williams Company (The); Macropoxy 646 Fast Cure, (5.0-10.0) DFT.
    - c. Tnemec Inc.; Series V69F Hi-Build Epoxoline II (6.0-10.0) DFT
  2. Second Coat:
    - a. Benjamin Moore & Co. Ben; Corotech V160 Surface Tolerant Epoxy Mastic (4.6–7.2).
    - b. Sherwin-Williams Company (The); Macropoxy 646 Fast Cure, (5.0-10.0) DFT.
    - c. Tnemec Inc.; Series V69F Hi-Build Epoxoline II (6.0-10.0) DFT
  3. Third Coat:
    - a. Benjamin Moore & Co. Ben; Corotech V510 Semigloss ( or V500 Gloss) Aliphatic Urethane (2.0-2.8).
    - b. Sherwin-Williams Company (The); Hi-Solid Polyurethane 250, Aliphatic Polyurethane, (3.0-5.0) DFT.
    - c. Tnemec Inc.; Series 1095 Endura-Shield (2.5-3.5) DFT
- C. Galvanized-Metal Substrates:
1. First Coat:
    - a. Benjamin Moore & Co. Corotech V160 Epoxy Mastic Coating @4.6-7.2 DFT
    - b. Sherwin-Williams Company (The); Macropoxy 646 B58 series 7.0-5.0 mils DFT
    - c. Tnemec Inc.; Series 66HS Hi-Build Epoxoline at 3.0 to 5.0 mils DFT.
  2. Second Coat:
    - a. Benjamin Moore & Co. Corotech V500 Acrylic Aliphatic Urethane Coating Gloss or V510 Acrylic Aliphatic Urethane Coating Semi-Gloss at 3.2-4.6 DFT
    - b. Sherwin-Williams Company (The); Hi Solids Polyurethane B65 series 4.5-3.0 mils DFT
    - c. Tnemec Inc.; Series 1074 or 1095 Endura-Shield II at 2.0 to 5.0 mils DFT.
- D. Wood Substrates:
1. First Coat:
    - a. Benjamin Moore & Co. Insul-X Aqua Lock Plus Primer

- b. Sherwin-Williams Company (The); Exterior Oil-Based Wood Primer Y24W8020 at 2.3 mils DFT
  - c. Tnemec Inc.; Series V10-99W Primer
2. Second and Third Coat:
- a. Benjamin Moore & Co. Corotech V331 Acrylic DTM Enamel Semi-Gloss at 2-2.2 DFT (third coat of same)
  - b. Sherwin-Williams Company (The); Sher-Cryl HPA High Performance Acrylic Semi-Gloss B66W350 at 2.5-4.0 mils DFT.
  - c. Tnemec Inc.; Series 1029 Enduratone
- E. Aluminum Substrates:
1. First Coat:
- a. Benjamin Moore & Co. Corotech V160 Epoxy Mastic Coating @4.6-7.2 DFT
  - b. Sherwin-Williams Company (The); Macropoxy 646 Fast Cure Epoxy B58W610 at 5.0-10.0 mils DFT
  - c. Tnemec Inc.; Series 66HS Hi-Build Epoxoline at 4.0-6.0 mils DFT
2. Second Coat:
- a. Benjamin Moore & Co. Corotech V500 Acrylic Aliphatic Urethane Coating Gloss or V510 Acrylic Aliphatic Urethane Coating Semi-Gloss at 3.2-4.6 DFT
  - b. Sherwin-Williams Company (The); Hi Solids Polyurethane B65 series 4.5-3.0 mils DFT
  - c. Tnemec Inc.; Series 1074 or 1095 Endura-Shield II at 2.0-5.0 mils DFT
- F. CMU:
1. First Coat:
- a. Benjamin Moore & Co. Ultra-Spec Masonry 100% Acrylic Masonry 608 Flat @9. DFT
  - b. Sherwin-Williams Company (The) Con-Flex XL High Build Coating A05W451 at 6.0-7.5 mils DFT.
  - c. Tnemec Inc.; Series 156 Color Enviro-Crete @4.0-8.0 mils DFT (use Tnemec-Tape for cracks larger than 1/64" wide)
2. Second Coat:
- a. Benjamin Moore & Co. Super Spec Masonry 100% Acrylic Elastomeric 360.
  - b. Sherwin-Williams Company (The); Con-Flex XL High Build Coating A05W451 at 6.0-7.5 mils DFT.
  - c. Tnemec Inc.; Series 156 Color Enviro-Crete @4.0-8.0 mils DFT

END OF SECTION 09 96 00