

# BIDDING DOCUMENTS

for

CONTRACT NO. 22015-D: Electrical Construction

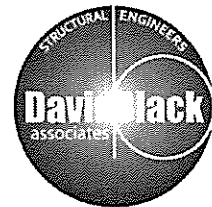
SOUTHAMPTON TOWNSHIP  
FRANKLIN COUNTY

FURNACE RUN PARK  
WELCOME CENTER

2244 LINDSAY LOT ROAD  
SHIPPENSBURG, PA

Prepared By:  
David Black Associates, Inc.  
501 Lincoln Way East  
Chambersburg, PA 17201

May 2024





00002

PROJECT DIRECTORY

Owner	Southampton Township -Franklin Co. 705 Municipal Drive Shippensburg PA 17257 Ph: 717-860-8508 Email: southamptontownshp.org
Project Engineer	David Black Associates, Inc. 501 Lincoln Way East Chambersburg, PA 17201 Ph: 717-267-0202 Fax: 717-267-3646 Email: dblack@dba-ae.com
Engineer Consultants	Paragon Engineering Services, Inc. 550 Cleveland Avenue, Suite 204 Chambersburg, PA 17201 Ph: 717-977-5731 Email: cwong@PEServices.org
Architectural & Interior Design Consultants	And Company 7893 Golf Vista Drive Greencastle, PA 17225 Ph: 717-414-6663 Todd@and-company.com

END OF PROJECT DIRECTORY



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INVITATION TO BID

Notice is given hereby that the SOUTHAMPTON TOWNSHIP SUPERVISORS

will accept Bids for construction of

Furnace Run Park Welcome Center  
Shippensburg, PA

Contract No. 22106-D - Electrical Construction

according to Drawings and Specifications prepared by David Black Associates, Inc. and Paragon Engineering Services and described in general as:

Electrical construction work for a one-story wood framed structure of approximately 2830 square feet of floor area containing conference/meeting rooms and rest rooms associated with the park.

Sealed bids will be received at the Office of the Southampton Township Supervisors, located at 705 Municipal Drive, Shippensburg, PA 17257 until:

12:00 Noon on, May 23, 2024 ("Bid Opening")

Bids received after that time will not be accepted and will be returned unopened. Bids will be publicly opened and read aloud for the project immediately thereafter at the Township Supervisors' Meeting Room.

The work to be performed is described in the Contract Documents for the Project. Copies of the Contract Documents in PDF format may be downloaded from [www.southamptontownship.org](http://www.southamptontownship.org) free of charge. Hard copies of the Contract Documents may be secured by prospective bidders by visiting the Southampton Township Municipal Office at 705 Municipal Drive, Shippensburg, PA 17257, Monday through Friday from 8 AM - 4 PM; by Telephone at 717-532-9041; or by email to Maria Misner [mmisner@southamptontownship.org](mailto:mmisner@southamptontownship.org). A non-refundable fee of \$100 payable to Southampton Township must accompany a request for hard copies of the Contract Documents.

Each BID must be accompanied by a Bid Bond drawn upon a Surety authorized to do business in the Commonwealth, cash, or a certified good faith check drawn upon a bank authorized to do business in the Commonwealth in the amount of not less than ten (10%) percent of the amount of the base bid. In the event that any bidder shall, upon award of the contract to it, fail to honor their bid and sign and return the Contract and the other required documents, the good faith deposit provided for herein or the bond shall be forfeited to the Owner as liquidated damages.

The Township reserves the right: 1) to reject any or all bids; 2) to seek new bids; 3) to waive any informality, irregularity, mistake, error or omission in any Bid received; 4) to accept the lowest responsible Bid deemed to be most favorable to the interests of the Southampton Township. As part of its evaluation of the Bids submitted, the Township or its representatives may interview the Bidders.

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid

must be executed) and delivered to the place where bids are to be submitted at any time prior to the opening of Bids. After Bid Opening, Bids shall be firm and binding for a period of sixty (60) calendar days. Bids cannot be modified or withdrawn (except as provided) during that time period.

Bidders, subcontractors, their workers, and any persons providing labor and products to the project shall be persons lawfully permitted to work in the United States and the Commonwealth of Pennsylvania.

As a precondition of being award a Contract, the successful Bidder, and its subcontractor(s) are required to provide confirmation of compliance with Act 127 of 2012, the "Public Works Employment Verification Act".

A Performance and Payment Bond is required by the Contract Documents and is to be for one hundred percent (100%) of the cost of the work, according to the Contract Bid for each respective Contract. A Warranty Bond is also required by the Contract Documents and is to be for ten percent (10%) of the cost of the work, according to the Contract Bid for each respective Contract. An anti-collusion affidavit is required to be submitted with the Bid. The Contract will be subject to the Commonwealth of Pennsylvania Prevailing Wage Determination established by the Pennsylvania Department of Labor and Industry.

A Pre-Bid Conference will be held at 10:00 AM on May 14, 2024, at the Township Office located at 705 Municipal Drive, Shippensburg, PA 17257. Representatives of the Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of Record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

Questions and inquiries regarding the project will be accepted by the Engineer, by email only and directed to the Project Engineer, David Black ([dblack@dba-ae.com](mailto:dblack@dba-ae.com)), until 4:00 PM on April 21, 2023.

SOUTHAMPTON TOWNSHIP SUPERVISORS

## INSTRUCTIONS TO BIDDERS

### 1. DEFINED TERMS

Terms used in these Instructions to Bidders which are defined in the Standard Abbreviated Form of Agreement Between Owner and Contractor (AIA Document A104-2017.)

Certain additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

1.1 Bidder - one who submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a bid to a Bidder.

1.2 Bidding Documents - the Bidding Documents consist of the Invitation to Bid, Instruction to Bidders, Bid Form, Agreement Form, Construction Bond Forms, General Conditions, Supplementary Conditions, Technical Specifications and all addenda issued prior to the receipt of bids.

1.3 Successful Bidder - the responsible and responsive Bidder selected by Owner (on the basis of Owner's evaluation as hereinafter provided) to perform the Work for the Project.

### 2. COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.2 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

### 3. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

3.1 It is the responsibility of each Bidder before submitting a Bid:

3.1.1 To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical data" referred to below);

3.1.2 To visit the site to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect cost, progress, performance or finishing of the Work;

3.1.3 To consider federal, state and local Laws and Regulations that may affect cost, progress, performance or finishing of the Work;

3.1.4 To study and carefully correlate Bidder's observations with the Contract Documents and such other related documents.

3.1.5 To promptly notify Engineer of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between the Contract Documents and such other related documents.

3.2 Before submitting a Bid each Bidder will be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

3.3 On request in advance, Owner will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former conditions upon completion of such explorations, investigations, tests and studies.

3.4 Reference is made to the Supplementary Conditions for the identification of the general nature of work that is to be performed at the site by Owner or others (such as utilities and other prime contractors) that relates to the work for which a Bid is to be submitted. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such work.

3.5 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and applying the specific means, methods, techniques, sequences or procedures of construction (if any) that may be shown or indicated or expressly required by the Contract Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Contract Documents and the written resolutions thereof by Engineer is acceptable to Bidder, and that the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

3.6 The provisions of 4.1 through 4.5, inclusive, do not apply to Asbestos, Polychlorinated biphenyls (PCBs), Petroleum, Hazardous Waste or Radioactive material covered by Paragraph 4.5 of the General Conditions.

#### 4. AVAILABILITY OF LANDS FOR WORK, etc.

The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.

#### 5. INTERPRETATIONS AND ADDENDA

5.1 All questions about the meaning or intent of the Contract Documents are to be directed to Engineer. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will

be binding. Oral and other interpretations or clarifications will be without legal effect.

5.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer.

## 6. BID SECURITY

6.1 Each Bid must be accompanied by Bid security in an amount of ten percent of the Bidder's base Bid price and in the form of a certified good faith check made payable to Owner, cash or a Bid Bond issued by a Surety authorized to do business in the Commonwealth and meeting the requirements of Paragraph 5.1 of the General Conditions.

6.2 The Bid security of the Successful Bidder will be retained until such bidder has executed the Agreement and furnished the required documents, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required documents within three days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited to the Owner as liquidated damages. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the thirtieth day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within fourteen days after the Bid opening.

## 7. CONTRACT TIME

The Work is to be substantially completed in 150 calendar days from the date when the contract time commences to run and also completed and ready for final payment is 30 days from the date of substantial completion.

## 8. LIQUIDATED DAMAGES

Owner and Contractor recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in paragraph 7 above, plus any extensions thereof allowed in accordance with Article 8 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner Two Hundred Fifty and 00/00 dollars (\$250.00) for each day that expires after the time and dates specified in paragraph 9 for Substantial Completion of the total project and designated portions of the Project until the Work is substantially complete. After Substantial Completion if Contractor shall neglect, refuse or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner Two Hundred Fifty and 00/00 dollars (\$250.00) for each day that expires after the time specified in paragraph 7 for completion and readiness for final payment.

## 9. SUBSTITUTE OR "OR-EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective

Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in Paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in the General Requirements.

## 10. SUBCONTRACTORS, SUPPLIERS AND OTHERS

10.1 If the Owner requests the identity of any Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to Owner in advance of the specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within seven days after the Bid opening submit to Owner a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by Owner.

10.2 No Contractor shall be required to employ any Subcontractor, Supplier, other person or organization against whom Contractor has reasonable objection.

## 11. BID FORM

11.1 The Bid Form is included with the Bidding Documents; additional copies may be obtained from Engineer ( or the Issuing Office).

11.2 All blanks on the Bid Form must be completed in ink or by typewriter.

11.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

11.4 Bids by partnerships must be executed in the partnership name and signed by a general partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5 All names and titles must be typed or printed below the signature.

11.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Bid Form).

11.7 The address and telephone number for communications regarding the bid must be shown.

11.8 Bidders may submit a Bid for any combination of the separate Bid Forms.

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## 12. SUBMISSION OF BIDS

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address of the Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it. A submission of a Bid by fax or email will not be accepted.

12.2 Prospective Bidders are furnished one copy of the Bidding Documents with one separate unbound copy of the Bid Form and the Bid Bond. The Bidding Documents may be retained by the Bidder. The unbound copy of the Bid Form is to be completed and submitted with the Bid security.

### 13. OPENING OF BIDS

Bids will be opened publicly and read aloud.

### 14. BIDS TO REMAIN SUBJECT TO ACCEPTANCE

All bids will be firm and binding and remain subject to acceptance for sixty (60) days after the Bid Opening date and time, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

### 15. AWARD OF CONTRACT

15.1 Owner reserves the right to reject any and all Bids, including without limitation the right to reject any or all nonconforming, non-responsive, unbalanced or conditional Bids and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive any and all informalities not involving price, time or changes in the Work and to negotiate with any Bidder. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

15.2 In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

15.3 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. Owner may also consider the operating costs, maintenance requirements performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

15.4 Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

15.5 If the contract is to be awarded, it will be awarded to the responsible Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Owner.

15.6 If the contract is to be awarded, Owner will give the Successful Bidder a Notice of Award

within sixty (60) days after the Bid Opening date and time.

16. CONTRACT SECURITY

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth Owner's requirements as to performance and payment bonds. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required performance and payment bonds when required.

17. SIGNING OF AGREEMENT

When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within seven (7) days thereafter, Contractor shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds and Certificate of Insurance. Within ten (10) days thereafter Owner shall deliver one fully signed counterpart to Contractor. Each counterpart is to be accompanied by a complete set of the Drawings with appropriate identification.

18. A Pre-Bid Conference will be held at 10:00 AM on May 23, 2024, at the Township Office located at 705 Municipal Drive, Shippensburg, PA 17257. Representatives of the Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of Record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

19. RETAINAGE

Provisions concerning retainage and Contractors' rights to deposit securities in lieu of retainage are set forth in the Agreement.

END OF INSTRUCTIONS TO BIDDERS

SECTION 00310-D

BID FORM

CONTRACT NO.: 22015-D - ELECTRICAL CONSTRUCTION - WELCOME CENTER  
SOUTHAMPTON TOWNSHIP - FRANKLIN COUNTY

THIS BID IS SUBMITTED TO: SOUTHAMPTON TOWNSHIP - FRANKLIN COUNTY  
705 MUNICIPAL DRIVE  
SHIPPENSBURG, PA 17257

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for SIXTY (60) days after the day of Bid opening. BIDDER will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within seven days after the date of OWNER's Notice of Award.
3. In submitting this Bid, BIDDER represents, as more /fully set forth in the Agreement, that:
  - A. BIDDER has examined and carefully studies the Bidding Documents and the following Addenda receipt of all which is hereby acknowledged:  
  
Addendum No. \_\_\_\_\_, Dated \_\_\_\_\_  
Addendum No. \_\_\_\_\_, Dated \_\_\_\_\_  
Addendum No. \_\_\_\_\_, Dated \_\_\_\_\_  
Addendum No. \_\_\_\_\_, Dated \_\_\_\_\_
  - B. BIDDER has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work.
  - C. BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
  - D. BIDDER acknowledges that OWNER and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by BIDDER and safety

precautions and programs incident thereto. BIDDER does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.

- E. BIDDER is aware of the general nature of the Work to be performed by Owner and other Prime Contractors at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.
  - F. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
  - G. BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that BIDDER has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.
4. BIDDER will complete the Work in accordance with the Contract Documents for the following prices:
- A. CONTRACT BASE BID:  
LUMP SUM BID PRICE \_\_\_\_\_  
(\$\_\_\_\_\_).
  - B. ALTERNATE BIDS
    - 1. Each Contractor shall set out, in the spaces provided in the Proposal Form, lump sum amounts (to include all costs of labor, materials, equipment and services, permits, fees, insurance, taxes, overhead and profit) which are to be added or deducted to his lump sum proposal for the Base Bid work, provided that the items of work enumerated below are added or deducted to the scope of the work required by the Contract Drawings and Specifications.
    - 2. Each Contractor shall bid all Alternates.
    - 3. It shall be understood, in conjunction with the description of the Alternates set out below, that all conditions of the General and Supplementary General Requirements thereto, applicable sections of the specifications and of the drawings are to govern the scope, quality and execution of such work.
    - 4. The Successful Bidder will be selected based upon the base bid plus any of the following alternates that are selected by the Owner. The contract time will remain as stated, regardless of alternates that are selected by the Owner.

Contract Alternates for Contract No.: 22015-D - Electrical Construction

ALTERNATE A-1:

Revisions to Base Bid for General Construction Work to delete provisions for an adhered 2" manufactured stone veneer and provide an adhered 2" natural stone veneer with water barrier system, stone cap, and cap and base flashing.

Add or Deduct \$ \_\_\_\_\_

ALTERNATE A-2:

Revisions to Base bid for General Construction Work to delete provisions for metal standing seam roof panels and to provide and install Owens Corning Duration architectural shingles with life time warranty with manufacturer's approved installation.

Add or Deduct \$ \_\_\_\_\_

ALTERNATE A-3:

Revisions to Base bid for General Construction Work to delete provisions for porcelain wall tiles in all four (4) bath rooms and kitchen and to provide and install Marlite Symmetrix Smart Seam Subway (3x5) fiberglass reinforced plastic panels on these walls with accessories installed per manufacturer's requirements.

Add or Deduct \$ \_\_\_\_\_

C. UNIT PRICES (ELECTRICAL CONSTRUCTION CONTRACT)

1. It is agreed that, in the event the Contractor is directed by the Owner to increase the following materials from the quantities required by the contract documents, the following unit costs will apply. Such unit costs will be used to adjust the contract amount and shall include all direct and indirect costs, overhead, taxes, insurance and profit.
  - a. Owner reserves the right to accept or reject any or all unit prices.
  - b. Unit prices, if accepted in the award of the contract, shall be applied in computing the value of change orders, additions, and substitutions made in the work.
  - c. Each unit price shall include all work, materials and incidentals necessary to complete the item, except where noted.
  - d. Quantity Measurements: The Contract will provide the following:
    - 1). Materials, equipment and personnel for quantity measurements.
    - 2). Measurements and computations required to determine quantities.

4. Rock Excavation (Utility Trenches)
  - a. For utility trenches only for each cubic yard of classified rock excavation and removal as verified by the Engineer including offsite disposal.
  - b. Unit Price - \_\_\_\_\_ dollars.
5. Compacted Earth for Rock/Unsuitable Soil Fill (Trenches)
  - a. For each cubic yard of compacted backfill, in place, including cost of offsite borrow.
  - b. Unit Price - \_\_\_\_\_ dollars.

5. TIME SCHEDULE

- A. BIDDER agrees that the Work will comply with the milestone dates and be substantially complete in 210 calendar days after the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions within 30 calendar days after the date of substantial completion.

6. CHANGES IN WORK

- A. When other changes in work, not covered in the contract documents, and involving added cost, are directed to be performed on a cost-plus fee basis, such fee will include all indirect costs, overhead, and profit, and will be as follows:
  1. To the Contractor for work performed with his own forces, total overhead and profit     %.
  2. To the Contractor on work performed by other than his own forces, total overhead and profit     %.
  3. To the Contractor for additional materials and equipment incorporated in the work, total overhead and profit     %.
- B. When work is deducted from the amount of the contract, the undersigned agrees to credit to the Owner the net cost of the value of such work plus fee as follows:
  1. For all work deducted under these Specifications, net cost plus     %.

7. The following documents are attached to and made a condition of this Bid:

- A. Required Bid Security.
- B. Certificate of Non-Segregated Facilities
- C. Non-Collusion Affidavit

8. Communications concerning this Bid shall be addressed to the address of BIDDER indicated below.



9. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

SUBMITTED ON \_\_\_\_\_, 2024.

If BIDDER is:

An Individual

By \_\_\_\_\_ (SEAL)  
(Individual's Name: Typed and Signature)

By \_\_\_\_\_ (SEAL)  
(Individual's Signature)

doing business as \_\_\_\_\_

Business address: \_\_\_\_\_

\_\_\_\_\_

Phone No.: \_\_\_\_\_

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

A Partnership

By \_\_\_\_\_  
(Firm Name)

\_\_\_\_\_  
(General Partner's Name: Typed and Signature)

\_\_\_\_\_  
(General Partner's Signature)

Business address: \_\_\_\_\_

\_\_\_\_\_  
Phone No.: \_\_\_\_\_

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

A Corporation

By \_\_\_\_\_  
(Corporation name)

\_\_\_\_\_  
(State of incorporation)

By \_\_\_\_\_  
(Typed name of person authorized to sign)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

(Corporate Seal)

Attest \_\_\_\_\_  
(Corporate Officer)

Business address: \_\_\_\_\_

\_\_\_\_\_  
Phone No.: \_\_\_\_\_

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

END OF SECTION

# AIA<sup>®</sup> Document A310<sup>™</sup> – 2010

## Bid Bond

**CONTRACTOR:**  
(Name, legal status and address)

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

**OWNER:**  
(Name, legal status and address)

**BOND AMOUNT:**

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

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

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

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

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

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

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_

_____	(Contractor as Principal)	(Seal)
(Witness)	_____	(Title)
_____	(Surety)	(Seal)
(Witness)	_____	(Title)

**CAUTION:** You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.





# AIA<sup>®</sup> Document A104<sup>®</sup> – 2017

## Standard Abbreviated Form of Agreement Between Owner and Contractor

AGREEMENT made as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_  
*(In words, indicate day, month and year.)*

**BETWEEN** the Owner:  
*(Name, legal status, address and other information)*

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

and the Contractor:  
*(Name, legal status, address and other information)*

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

The Architect:  
*(Name, legal status, address and other information)*

The Owner and Contractor agree as follows.

**TABLE OF ARTICLES**

- 1 THE WORK OF THIS CONTRACT
- 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 3 CONTRACT SUM
- 4 PAYMENT
- 5 DISPUTE RESOLUTION
- 6 ENUMERATION OF CONTRACT DOCUMENTS
- 7 GENERAL PROVISIONS
- 8 OWNER
- 9 CONTRACTOR
- 10 ARCHITECT
- 11 SUBCONTRACTORS
- 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
- 13 CHANGES IN THE WORK
- 14 TIME
- 15 PAYMENTS AND COMPLETION
- 16 PROTECTION OF PERSONS AND PROPERTY
- 17 INSURANCE & BONDS
- 18 CORRECTION OF WORK
- 19 MISCELLANEOUS PROVISIONS
- 20 TERMINATION OF THE CONTRACT
- 21 CLAIMS AND DISPUTES

**EXHIBIT A DETERMINATION OF THE COST OF THE WORK**

**ARTICLE 1 THE WORK OF THIS CONTRACT**

The Contractor shall execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

**ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

§ 2.1 The date of commencement of the Work shall be:  
(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.

- Established as follows:  
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 2.2 The Contract Time shall be measured from the date of commencement.

**§ 2.3 Substantial Completion**

§ 2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check the appropriate box and complete the necessary information.)

- Not later than ( ) calendar days from the date of commencement of the Work.
- By the following date:

§ 2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

**Portion of Work**

**Substantial Completion Date**

§ 2.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 2.3, liquidated damages, if any, shall be assessed as set forth in Section 3.5.

**ARTICLE 3 CONTRACT SUM**

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

- Stipulated Sum, in accordance with Section 3.2 below
- Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below
- Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be (\$ ), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

**§ 3.2.2 Unit prices, if any:**

*(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

**§ 3.2.3 Allowances, if any, included in the stipulated sum:**

*(Identify each allowance.)*

Item	Price
------	-------

**§ 3.3 Cost of the Work Plus Contractor's Fee**

**§ 3.3.1** The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

**§ 3.3.2** The Contractor's Fee:

*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)*

**§ 3.4 Cost of the Work Plus Contractor's Fee With a Guaranteed Maximum Price**

**§ 3.4.1** The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

**§ 3.4.2** The Contractor's Fee:

*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)*

**§ 3.4.3 Guaranteed Maximum Price**

**§ 3.4.3.1** The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed (\$ ), subject to additions and deductions by changes in the Work as provided in the Contract Documents.

This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

*(Insert specific provisions if the Contractor is to participate in any savings.)*

**§ 3.4.3.2** The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

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*(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)*

**§ 3.4.3.3 Unit Prices, if any:**

*(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)*

<b>Item</b>	<b>Units and Limitations</b>	<b>Price per Unit (\$0.00)</b>
-------------	------------------------------	--------------------------------

**§ 3.4.3.4 Allowances, if any, included in the Guaranteed Maximum Price:**

*(Identify each allowance.)*

<b>Item</b>	<b>Price</b>
-------------	--------------

**§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:**

**§ 3.4.3.6** To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.

**§ 3.4.3.7** The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 3.4.3.5. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 3.4.3.5 and the revised Contract Documents.

**§ 3.5 Liquidated damages, if any:**

*(Insert terms and conditions for liquidated damages, if any.)*

**ARTICLE 4 PAYMENT**

**§ 4.1 Progress Payments**

§ 4.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the \_\_\_\_\_ day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the \_\_\_\_\_ day of the \_\_\_\_\_ month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than ( ) days after the Architect receives the Application for Payment.  
*(Federal, state or local laws may require payment within a certain period of time.)*

§ 4.1.4 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold retainage from the payment otherwise due as follows:  
*(Insert a percentage or amount to be withheld as retainage from each Application for Payment and any terms for reduction of retainage during the course of the Work. The amount of retainage may be limited by governing law.)*

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.  
*(Insert rate of interest agreed upon, if any.)*

%

**§ 4.2 Final Payment**

§ 4.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a Guaranteed Maximum Price; and
- .3 a final Certificate for Payment has been issued by the Architect in accordance with Section 15.7.1.

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

**ARTICLE 5 DISPUTE RESOLUTION**

**§ 5.1 Binding Dispute Resolution**

For any claim subject to, but not resolved by, mediation pursuant to Section 21.5, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

- Arbitration pursuant to Section 21.6 of this Agreement
- Litigation in a court of competent jurisdiction

Other (Specify)

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.

**ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS**

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A104™–2017, Standard Abbreviated Form of Agreement Between Owner and Contractor.

§ 6.1.2 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:  
(Insert the date of the E203–2013 incorporated into this Agreement.)

§ 6.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

§ 6.1.4 The Specifications:  
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
---------	-------	------	-------

§ 6.1.5 The Drawings:  
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date
--------	-------	------

§ 6.1.6 The Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are enumerated in this Article 6.

§ 6.1.7 Additional documents, if any, forming part of the Contract Documents:

.1 Other Exhibits:

*(Check all boxes that apply.)*

- Exhibit A, Determination of the Cost of the Work.
- AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*
- The Sustainability Plan:

Title	Date	Pages
-------	------	-------

- Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

.2 Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents.)*

## **ARTICLE 7 GENERAL PROVISIONS**

### **§ 7.1 The Contract Documents**

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. 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 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 to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

### **§ 7.2 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 between any persons or entities other than the Owner and the Contractor.

### **§ 7.3 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.

### **§ 7.4 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.

### **§ 7.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service**

**§ 7.5.1** 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 will 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.

**§ 7.5.2** The Contractor, Subcontractors, Sub-subcontractors and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 7.6 and 7.7, 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 this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

### **§ 7.6 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.

### **§ 7.7 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.

### **§ 7.8 Severability**

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.

### **§ 7.9 Notice**

**§ 7.9.1** Except as otherwise provided in Section 7.9.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering Notice in electronic format such as name, title and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

**§ 7.9.2** Notice of Claims 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.

### **§ 7.10 Relationship of the Parties**

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

## **ARTICLE 8 OWNER**

### **§ 8.1 Information and Services Required of the Owner**

**§ 8.1.1** Prior to commencement of the Work, at the 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 8.1.1, the Contract Time shall be extended appropriately.

**§ 8.1.2** The Owner shall furnish all necessary surveys and a legal description of the site.

**§ 8.1.3** 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.

**§ 8.1.4** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments, and charges required for the construction, use, or occupancy of permanent structures or for permanent changes in existing facilities.

### **§ 8.2 Owner's Right to Stop the Work**

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the 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 is 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.

### **§ 8.3 Owner's Right to Carry Out the Work**

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 15.4.3, 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 the Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. 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 21.

## **ARTICLE 9 CONTRACTOR**

### **§ 9.1 Review of Contract Documents and Field Conditions by Contractor**

**§ 9.1.1** 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.

**§ 9.1.2** 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 8.1.2, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

**§ 9.1.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

### **§ 9.2 Supervision and Construction Procedures**

**§ 9.2.1** 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, unless the Contract Documents give other specific instructions concerning these matters.

**§ 9.2.2** 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.

### **§ 9.3 Labor and Materials**

**§ 9.3.1** 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.

**§ 9.3.2** 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 skilled in tasks assigned to them.

**§ 9.3.3** The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

### **§ 9.4 Warranty**

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants

that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage. All other 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 15.6.3.

#### **§ 9.5 Taxes**

The Contractor shall pay sales, consumer, use, and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

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

**§ 9.6.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as 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.

**§ 9.6.2** 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. 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.

#### **§ 9.7 Allowances**

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Contractor's costs for unloading and handling at the site, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance.

#### **§ 9.8 Contractor's Construction Schedules**

**§ 9.8.1** The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, 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.

**§ 9.8.2** The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

#### **§ 9.9 Submittals**

**§ 9.9.1** The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

**§ 9.9.2** Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

**§ 9.9.3** 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 or unless the Contractor needs to provide such services in order to carry out the Contractor's own responsibilities. If professional design services or certifications by a design professional are specifically required, the Owner and the Architect will specify the performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional. If no criteria are specified, the design



shall comply with applicable codes and ordinances. Each Party shall be entitled to rely upon the information provided by the other Party. The Architect will review and approve or take other appropriate action on submittals for the limited purpose of checking for conformance with information provided and the design concept expressed in the Contract Documents. The Architect's review of Shop Drawings, Product Data, Samples, and similar submittals shall be for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. In performing such review, the Architect will approve, or take other appropriate action upon, the Contractor's Shop Drawings, Product Data, Samples, and similar submittals.

#### **§ 9.10 Use of Site**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

#### **§ 9.11 Cutting and Patching**

The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly.

#### **§ 9.12 Cleaning Up**

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 material from and about the Project.

#### **§ 9.13 Access to Work**

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

#### **§ 9.14 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

#### **§ 9.15 Indemnification**

**§ 9.15.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

**§ 9.15.2** In claims against any person or entity indemnified under this Section 9.15 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 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

### **ARTICLE 10 ARCHITECT**

**§ 10.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

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

§ 10.3 The Architect will visit the site at intervals appropriate to the stage of the construction 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 safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.4 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 10.5 Based on the Architect's evaluations of the Work and of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 10.6 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.7 The Architect will review and approve or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.8 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions on all claims, disputes, and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

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

## **ARTICLE 11 SUBCONTRACTORS**

§ 11.1 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.

§ 11.2 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the Subcontractors or suppliers proposed for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. 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. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the 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, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

## **ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

§ 12.1 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.

§ 12.2 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a Separate Contractor because of delays, improperly timed activities, or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a Separate Contractor.

## **ARTICLE 13 CHANGES IN THE WORK**

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor, and Architect, or by written Construction Change Directive signed by the Owner and Architect. Upon issuance of the Change Order or Construction Change Directive, the Contractor shall proceed promptly with such changes in the Work, unless otherwise provided in the Change Order or Construction Change Directive.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order.

§ 13.3 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

## **ARTICLE 14 TIME**

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing this Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.6.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably

anticipatable, unavoidable casualties, or any causes beyond the Contractor's control; or (3) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, subject to the provisions of Article 21.

## **ARTICLE 15 PAYMENTS AND COMPLETION**

### **§ 15.1 Schedule of Values**

**§ 15.1.1** Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price pursuant to Section 3.2 or 3.4, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Stipulated Sum or Guaranteed Maximum Price to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy required by the Architect. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

**§ 15.1.2** The allocation of the Stipulated Sum or Guaranteed Maximum Price under this Section 15.1 shall not constitute a separate stipulated sum or guaranteed maximum price for each individual line item in the schedule of values.

### **§ 15.2 Control Estimate**

**§ 15.2.1** Where the Contract Sum is the Cost of the Work, plus the Contractor's Fee without a Guaranteed Maximum Price pursuant to Section 3.3, the Contractor shall prepare and submit to the Owner a Control Estimate within 14 days of executing this Agreement. The Control Estimate shall include the estimated Cost of the Work plus the Contractor's Fee.

**§ 15.2.2** The Control Estimate shall include:

- .1 the documents enumerated in Article 6, including all Modifications thereto;
- .2 a list of the assumptions made by the Contractor in the preparation of the Control Estimate to supplement the information provided by the Owner and contained in the Contract Documents;
- .3 a statement of the estimated Cost of the Work organized by trade categories or systems and the Contractor's Fee;
- .4 a project schedule upon which the Control Estimate is based, indicating proposed Subcontractors, activity sequences and durations, milestone dates for receipt and approval of pertinent information, schedule of shop drawings and samples, procurement and delivery of materials or equipment the Owner's occupancy requirements, and the date of Substantial Completion; and
- .5 a list of any contingency amounts included in the Control Estimate for further development of design and construction.

**§ 15.2.3** When the Control Estimate is acceptable to the Owner and Architect, the Owner shall acknowledge it in writing. The Owner's acceptance of the Control Estimate does not imply that the Control Estimate constitutes a Guaranteed Maximum Price.

**§ 15.2.4** The Contractor shall develop and implement a detailed system of cost control that will provide the Owner and Architect with timely information as to the anticipated total Cost of the Work. The cost control system shall compare the Control Estimate with the actual cost for activities in progress and estimates for uncompleted tasks and proposed changes. This information shall be reported to the Owner, in writing, no later than the Contractor's first Application for Payment and shall be revised and submitted with each Application for Payment.

**§ 15.2.5** The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in the Control Estimate. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the Control Estimate and the revised Contract Documents.

### **§ 15.3 Applications for Payment**

**§ 15.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 15.1, for completed portions of the Work. The application shall be notarized, if required; be supported by all data substantiating the Contractor's right to payment that the Owner or Architect require; shall reflect retainage if provided for in the Contract Documents; and include any revised cost control information required by Section 15.2.4. 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.

§ 15.3.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 15.3.3 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 stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.3.4 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 other encumbrances adverse to the Owner's interests.

#### § 15.4 Certificates for Payment

§ 15.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.4.3.

§ 15.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.4.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.4.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, 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;
- .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.

§ 15.4.4 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 15.4.3, in whole or in part, that party may submit a Claim in accordance with Article 21.

## **§ 15.5 Progress Payments**

**§ 15.5.1** 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.

**§ 15.5.2** Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor or supplier except as may otherwise be required by law.

**§ 15.5.3** 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.

**§ 15.5.4** 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.

## **§ 15.6 Substantial Completion**

**§ 15.6.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

**§ 15.6.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 15.6.3** Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which 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.

**§ 15.6.4** 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.

## **§ 15.7 Final Completion and Final Payment**

**§ 15.7.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.7.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 15.7.2** Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien 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 such lien, including costs and reasonable attorneys' fees.



§ 15.7.3 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.

§ 15.7.4 Acceptance of final payment by the Contractor, a Subcontractor or 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 the final Application for Payment.

## ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

### § 16.1 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 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; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation, or replacement in the course of construction.

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 and property and their protection from damage, injury, or loss. The Contractor shall promptly remedy damage and loss to property 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 16.1.2 and 16.1.3. The Contractor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

### § 16.2 Hazardous Materials and Substances

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. 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 in the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 16.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 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.

§ 16.2.3 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 indemnify the Contractor for all cost and expense thereby incurred.

**ARTICLE 17 INSURANCE AND BONDS**

**§ 17.1 Contractor's Insurance**

**§ 17.1.1** 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 this Section 17.1 or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 18.4, unless a different duration is stated below:

**§ 17.1.2** Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than (\$ ) each occurrence, (\$ ) general aggregate, and (\$ ) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Contractor's indemnity obligations under Section 9.15.

**§ 17.1.3** Automobile Liability covering vehicles owned by the Contractor and non-owned vehicles used by the Contractor, with policy limits of not less than (\$ ) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance, and use of those motor vehicles along with any other statutorily required automobile coverage.

**§ 17.1.4** The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 17.1.2 and 17.1.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

**§ 17.1.5** Workers' Compensation at statutory limits.

**§ 17.1.6** Employers' Liability with policy limits not less than (\$ ) each accident (\$ ) each employee, and (\$ ) policy limit.

**§ 17.1.7** If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ 17.1.8** If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ 17.1.9** Coverage under Sections 17.1.7 and 17.1.8 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than (\$ ) per claim and (\$ ) in the aggregate.

**§ 17.1.10** The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Section 17.1 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the period required by Section 17.1.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy.



§ 17.1.11 The Contractor shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor.

§ 17.1.12 To the fullest extent permitted by law, the Contractor shall cause the commercial liability coverage required by this Section 17.1 to include (1) the Owner, the Architect, and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's Consultants, CG 20 32 07 04.

§ 17.1.13 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 this Section 17.1, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act 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.

**§ 17.1.14 Other Insurance Provided by the Contractor**

*(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)*

**Coverage**

**Limits**

**§ 17.2 Owner's Insurance**

**§ 17.2.1 Owner's Liability Insurance**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

**§ 17.2.2 Property Insurance**

§ 17.2.2.1 The Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed or materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section 17.2.2.2, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ 17.2.2.2 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section 17.2.2.1 or, if necessary, replace the insurance policy required under Section 17.2.2.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 18.4.

§ 17.2.2.3 If the insurance required by this Section 17.2.2 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ 17.2.2.4 If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 18.4, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ 17.2.2.5 Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Section 17.2.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by this Section 17.2.2. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

§ 17.2.2.6 Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any insurance required by this Section 17.2.2, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

#### § 17.2.2.7 Waiver of Subrogation

§ 17.2.2.7.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 17.2.2.7 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.

§ 17.2.2.7.2 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 17.2.2.7.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 17.2.2.8 A loss insured under the Owner's property insurance 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. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

#### § 17.2.3 Other Insurance Provided by the Owner

*(List below any other insurance coverage to be provided by the Owner and any applicable limits.)*

Coverage

Limits

#### § 17.3 Performance Bond and Payment Bond

§ 17.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract.

§ 17.3.2 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.

#### ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed, or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense, unless compensable under Section A.1.7.3 in Exhibit A, Determination of the Cost of the Work.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within ~~one year~~<sup>9/4</sup> after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.6.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 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.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

#### ARTICLE 19 MISCELLANEOUS PROVISIONS

##### § 19.1 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that 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 such assignment.

##### § 19.2 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.6.

##### § 19.3 Tests and Inspections

Tests, inspections, and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities shall be made at an appropriate time. 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 Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

##### § 19.4 The Owner's representative:

*(Name, address, email address and other information)*

§ 19.5 The Contractor's representative:  
(Name, address, email address and other information)

§ 19.6 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

## ARTICLE 20 TERMINATION OF THE CONTRACT

### § 20.1 Termination by the Contractor

If the Architect fails to certify payment as provided in Section 15.4.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

### § 20.2 Termination by the Owner for Cause

#### § 20.2.1 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 for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .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.

§ 20.2.2 When any of the reasons described in Section 20.2.1 exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon 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.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

### **§ 20.3 Termination by the Owner for Convenience**

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Owner shall pay the Contractor for Work executed; and costs incurred by reason of such termination, including costs attributable to termination of Subcontracts; and a termination fee, if any, as follows:

*(Insert the amount of or method for determining the fee payable to the Contractor by the Owner following a termination for the Owner's convenience, if any.)*

## **ARTICLE 21 CLAIMS AND DISPUTES**

**§ 21.1** Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.11 and Sections 15.7.3 and 15.7.4, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

### **§ 21.2 Notice of Claims**

**§ 21.2.1** 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 18.2, shall be initiated by notice to the Architect 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.

**§ 21.2.2** 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 18.2, shall be initiated by notice to the other party.

### **§ 21.3 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 in accordance with the requirements of the final dispute resolution method selected in this Agreement, whether in contract, tort, breach of warranty, or otherwise, 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 21.3.

**§ 21.4** If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

**§ 21.5** The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution 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, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

**§ 21.6** If the parties have selected arbitration as the method for binding dispute resolution in this 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 the Construction Industry Arbitration Rules in effect on the date of this Agreement. 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 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.

**§ 21.7** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party, at its sole discretion, 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).

§ 21.8 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, any party to an arbitration 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 a Claim not described in the written Consent.

§ 21.9 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to this Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

**§ 21.10 Continuing Contract Performance**

Pending final resolution of a Claim, except as otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

**§ 21.11 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 20. Nothing contained in this Section 21.11 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

This Agreement entered into as of the day and year first written above.

\_\_\_\_\_  
OWNER (Signature)

\_\_\_\_\_  
CONTRACTOR (Signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
(Printed name and title)

## SUPPLEMENTARY CONDITIONS

1. The following supplements modify, delete from, and/or add to the Agreement.

A. All Articles, or portions thereof, which are not specifically modified, deleted, or superceded hereby, remain in full effect.

B. The Agreement also may be supplemented elsewhere in the Contract Documents by provisions located in, but not necessarily limited to, Division 1 of the Specifications.

2. Article 7, Subparagraph 7.5.2 Add:

7.5.3 The Contractor will be furnished, free of charge, two copies of prints of Drawings and Specifications. The Contractor may secure additional copies of prints of Drawings and Specifications from the Engineer at the usual charge for reproduction and handling.

3. Article 9, After Subparagraph 9.2.2 add:

9.2.3. Contractor's resident superintendent shall be full-time, shall have a minimum of five (5) years, five (5) project experience in superintendent capacity, in projects of similar type and size as required by the Contract. Contractor shall submit superintendent's resume, including qualifications, at the pre-construction meeting or three (3) calendar weeks prior to commencing with the Work, whichever is the earliest. Resume shall include individual's name, years of construction experience, years of experience as superintendent, years of employment by Contractor, and a description of projects and their amounts on which the individual has worked on in the past five (5) years. The Owner reserves the right to unilaterally determine the acceptability of the proposed superintendent. Contractor's resident superintendent shall be on site whenever there is work performed either by Contractor's crew, subcontractor's crew, sub--subcontractor's crew, vendors, and any other party performing or assisting with the Work under the Contract. Contractor's resident superintendent shall be present during regular and non-regular working hours; Saturday, Sunday, and any legal holiday(s) the Contractor is permitted, by Owner, to perform the Work; and during all emergencies

4. Article 9, After Subparagraph 9.3.3 add:

9.3.4 Or Equal/Substitute Items

9.3.4.1 "Or-Equal: If in Engineer's sole discretion a Product proposed by Contractor is functionally the same, is fully equivalent in quality and durability, and is sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed Product may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements, specified in the following Paragraphs 9.3.4.3 through 9.3.4.8, for acceptance of proposed substitute items.

9.3.4.2 Substitute Items: If in Engineer's sole discretion a Product proposed by Contractor does not qualify as an "or-equal" item under Paragraph 9.3.4.1, it will be considered a proposed substitute item. The determination as to whether the Product is an "or-equal" or a proposed substitute item will be made during Engineer's review of the Product Data. If the Product proposed by the Contractor is not considered an "or-equal" Product, said Data will be returned to the

Contractor with the notation "Returned for Correction." Contractor will then be required to proceed as specified in the following Paragraphs 9.3.4.3 through 9.3.4.8.

9.3.4.3 Submit three copies of request for substitution, plus the number required to be returned to the entity making the request, to the Engineer. Each request for substitution shall cover on Product only.

9.3.4.4 Request for Equal or substitutions will be accepted only from a prime Contractor on the Project and, if requests are permitted during the Bidding period, from a Bidder as defined in the Instructions to Bidders.

9.3.4.5 If Instructions to Bidders allow requests for Equal or substitutions during the Bidding period, time the submittal so that Engineer receives the request for Equal or substitutions at least 7 days prior to the Bid opening.

9.3.4.6 Submit, with request for Equal or substitution, Drawings, Product data, warrant information, case histories, lists of projects on which the Product has been successfully used, test reports, manufacturer's company profile, name and address of manufacturer's service organization, and other data as required to establish that proposed substitute Product is fully equivalent in quality to the Product of the named manufacturer(s) and meets all Specification requirements.

9.3.4.7 Submit, with request for equal or substitution, the dollar amount which the Owner will receive as a credit toward the Contract Price if the Equal or substitution is approved. The Owner and Engineer reserve the right to make an independent investigation of the cost savings, to negotiate with the Contractor to increase the credit, and to reject a proposed Equal or substitution if the credit is considered insufficient.

9.3.4.8 The entity submitting the request for Equal or substitution shall include, on its transmittal letter, the signed statement: "The signer of this letter certifies that all requirements of Paragraph 9.3.4.8 have been or will be met." The signer of the transmittal letter, by making this statement, affirms that: the proposed substitute Product has been investigated and has been found to equal or exceed in quality and durability the Product of the named manufacturer(s) and, further, that it meets all Specification requirements; the same Product warranty, which would have been provided by the named manufacturer(s), will be provided for the substitute Product; the entity submitting the request for substitution will coordinate installation of the proposed substitute and make any required changes in the Work at no additional cost to the Owner; the entity submitting the request for substitution will not make claims for additional costs, including but not limited to costs resulting from increases in purchase price(s) and installation costs of accepted substitute Product(s), or additional time required to implement the substitution; the entity making the request for substitution will reimburse the Owner for all costs associated with review by Engineer, or others, of the request for substitution, all redesign costs, and all costs required to obtain re-approval from regulatory agencies; all licenses required for use of the proposed substitute Product will be obtained and paid for by the entity submitting the request for substitution and such license(s) will be transferred to the Owner; if required by the Engineer, the entity submitting the request for substitution will provide a special performance warranty or bond (separate from the Contract Performance Bond) as a condition of Engineer's acceptance of the proposed substitute Product (such bond may be in an amount up to 200 percent of the dollar value of the Product as determined by the Engineer).

9.3.4.9 Engineer will notify all potential bidders, through an Addendum, of the decision to accept or reject proposed substitute Product.



9.3.4.10 Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. Engineer will be the sole judge of acceptability, and no substitute will be include in any bid, ordered, installed, or utilized without Engineer's prior written approval.

5. Article 9, Subparagraph 9.5 add:

The Contractor shall be responsible for the payment of all sales and use taxes required by law on all Products which may be purchased for use in and which will become part of the Work. Owner may be exempt from sales and use taxes for certain Products to be incorporated into the Work. Contractor shall obtain legal advice to determine how and to what extent the Owner's tax exemption may be utilized by the Contractor. Owner will provide, at Contractor's request, required documentation to assist Contractor in obtaining any applicable tax exemptions.

6. Article 9, Subparagraph 9.6.1 is to be deleted and replaced as follows:

9.6.1 Unless otherwise provided in the Contract documents, the Owner shall secure and pay for the building permit as well as other permits, fee, 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.

7. Article 9, Subparagraph 9.6.2 is revised as follows:

. . . correction, and fees for supplemental building code inspection.

8. Article 9, After Subparagraph 9.6.2 add:

9.6.3 During the performance of this Agreement, the Contractor and subcontractor shall comply with all applicable Federal, State and Local Laws and Ordinances and all orders, rules, and regulations issued thereunder, including but not limited to:

9.6.3.1 FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (O.S.H.A.):

- a. The Contractor is required to promptly perform all reporting and recording as required by said Act.
- b. Contractor shall indemnify and hold harmless Owner, Engineer, Engineer's Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by arising out of or resulting from the performance of the Work, is caused in whole or in part of any negligent act or omission of Contractor, and Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws or Regulations regardless of the negligence of any such person or entity.

9.6.3.2 PENNSYLVANIA ACT 287 – UTILITIES PROTECTION – 73 P.S. 176 et. Seq.

The Contractor will be responsible for complying with Pennsylvania Act 287, commonly known as the "CALL BEFORE YOU DIG ACT." Excavation or digging contractors may learn the utilities and authority owners by calling 800-242-1776 statewide prior to excavation work. One call locates utility lines and the utilities are notified.

#### 9.6.3.3 PENNSYLVANIA STEEL PRODUCTS PROCUREMENT ACT

The Contractor is subject to the provisions of the Pennsylvania Steel Products Procurement Act of 1978, P.L. 6, as amended. The Act and amendments require that the Contractor use or furnish only steel products (as defined in the Act and amendments) which have been produced in the United States.

#### 9.6.3.4 PENNSYLVANIA ACT 247 OF 1972

The Contractor is subject to the provisions of Pennsylvania Act 247 of 1972, as amended, relating to the prevention of environmental pollution and the preservation of public natural resources.

#### 9.6.3.5 PENNSYLVANIA PUBLIC WORKS CONTRACT REGULATION LAW

The Contractor shall comply with the Pennsylvania Public Works Contract Regulation Law, as amended by Act 142 of 1994, as it relates to timely payment by Contractor/Subcontractor to its Subcontractors and suppliers.

#### 9.6.3.6 PENNSYLVANIA HUMAN RELATION ACT, 43 P.S. 951 et. seq.

- A. Non-Discrimination Provision: The Contractor agrees that he will comply with the provisions of the Pennsylvania Human Relations Act pursuant to the provision of Act #222 October 27, 1955, as amended by Act #19, February 28, 1961, and in accordance with the provisions of the Governor's Code of Fair Practice, effective June 6, 1963, and the Regulations of the Pennsylvania Human Relations Commission, as approved by the Attorney General July 17, 1965, in providing equal employment opportunities in connection with all Work performed by him at the job site pursuant to this Contract. The Contractor, therefore, agrees:
- (1) That he will not discriminate nor permit discrimination by his agents, servants or employees against any employees or applicant for employment with regard to hiring, tenure or employment, promotion, terms, conditions or privileges or employment at the job site covered by this Contract, because of race, color, religion, age or national origin, and will take such affirmative action as is hereinafter set forth to prevent same.
  - (2) a. That he will, in all publications or advertisements for employees to work at the job site covered by this Contract, placed by or on behalf of the Contractors, state that all qualified applicants will receive consideration for employment without

regard to sex, race, color, religion, age, or national origin.

b. That he will send to each labor union or representative of workers with which he has a collective bargaining agreement or other Contract or understanding, a notice to be provided by the Pennsylvania Human Relations Commission, advising the said labor union or worker's representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to his employees and applicants for employment.

(3) a. That he shall supply the contracting agency of the State with a periodic report, called "Compliance Report," relating to Work performed at the job site under this Contract as may be required by the Pennsylvania Human Relations Commission. The Commission shall, at all times, have access to employment records of said Contractor for purposes of investigation to ascertain compliance with the rules, regulations and orders of the Pennsylvania Human Relations Commission, relating to discrimination.

b. That he shall insert the provision of subsections (1), (2) and (3) of the paragraph in all Subcontracts which are entered by the Contractor under this Contract requiring Work to be done at the job site, and covenants to be binding upon such SUBCONTRACTORS.

(4) Compliance by the Contractor with subsections (1), (2) and (3) of this paragraph shall discharge the CONTRACTOR from any liability hereunder, relating to the non-discriminatory provisions of this Agreement.

B. The Liability of Subcontractor: The Subcontractor of the Contractor under paragraph A (3) (b) above shall have the same responsibilities and obligations as the Contractor to comply with the provision of paragraph A (1), (2) and (3) hereof, and shall be subject to the applicable penalties for failure to comply as hereinafter set forth in paragraph C.

C. Penalties for Failure to Comply.

(1) It is hereby agreed that the failure to comply with the foregoing requirements shall constitute a substantial breach of this Contract.

(2) In the event the Pennsylvania Human Relations Commission, after investigation and hearing, shall

determine that the Contractor or Subcontractor, as the case may be, has failed to comply with any of the provisions of paragraph A (1), (2), and (3) hereof, the Commission in addition to issuing any order it deems appropriate pursuant to Section 9 of the Pennsylvania Human Relations Act, shall certify such findings to the contracting agency of the State, with a recommendation for termination of the Contract or the Subcontract, as the case may be, or with a recommendation that such Contractor or Subcontractor be declared ineligible for any further public works contracts or subcontracts for a period of not more than two years from the date of such recommendation.

- (3) Should the contracting agency of the State adopt the recommendation to terminate the Contract, written notice of the fact shall be given to the Contractor by registered mail addressed to the Contractor's registered office in Pennsylvania, in which event all obligation on the part of the contracting agency to perform this Contract shall cease, save only the obligation to pay the Contractor the sums due, including any retained amounts, for all articles delivered or Work done, or for all articles or equipment for which the Contractor may be liable, to the date of such termination.
- (4) Should the contracting agency of the State adopt the recommendation to direct the Contractor to terminate a Subcontract entered into by the Contractor under this Contract, written note of this fact shall be given to the Contractor by registered mail addressed to the Contractor's registered office in Pennsylvania, and it shall then be the obligation of the Contractor to terminate such Subcontract pursuant to said written notice.
- (5) Should the contracting agency of the State adopt the recommendation to declare the Contractor or Subcontractor, as the case may be, ineligible for further public works contracts or subcontracts, written notice of this fact and of the duration of such period of ineligibility shall be given to the Contractor or Subcontractor by registered mail addressed to the Contractor's or Subcontractor's registered office in Pennsylvania.
- (6) From any order of the Pennsylvania Human Relations Commission, the Contractor or Subcontractor, as the case may be, shall have the right of appeal as in other cases provided by law, and the contracting agency of the State shall not act upon the recommendation of the Commission specified in paragraph C (2) above until the Contractor or Subcontractor has exhausted the right of appeal provided by law, or the time for such appeal shall have expired.

9.6.3.7 PENNSYLVANIA PREVAILING WAGE ACT 43 P.S. SUBSECTION 1651;

The bidders and the Contractors are also specifically notified that they must comply with the Pennsylvania Prevailing Wage Act, 43 Purdon's Statute, Section 1651, et seq. Accordingly, there is here submitted to all bidders a Pennsylvania Department of Labor and Industry prevailing wage rates to be paid by Contractors on the public works projects. This reference is to the prevailing minimum rates effective March 31, 1997. These are specifically incorporated into and made a part of this Agreement.

"Remedies and penalties.

- A. For an unintentional failure to pay the prevailing wages, the contractor will pay the difference or provide adequate security for the payment of the amounts required to be paid as prevailing wages to the affected workmen.
- B. For an intentional failure, the Contractor shall not be awarded any public contracts for three years, and the Contractor shall be liable to the commonwealth of Pennsylvania for liquidated damages, in addition to damages for any other breach of the contract, in the amount of the underpayment of wages."
- C. Duties of awarding agencies under Pennsylvania Prevailing Wage Act:
  - 1). The attached Prevailing Wage Determination is hereby incorporated into and made a part of this contract (Section 4 and Section 8, Paragraph 3).
  - 2). The following requirements are Incorporated into the specifications for the contract:
    - (a) The general prevailing minimum wage rates including contributions for employee benefits as shall have been determined by the Secretary which must be paid to the workmen employed in the performance of the contract.

The contractor shall pay no less than the wage rates as determined in the decision of the Secretary of Labor and Industry and shall comply with the conditions of the Pennsylvania Prevailing Wage Act approved August 15, 1961 (Act No. 442), as amended August 9, 1963 (Act No. 342), and the Regulations issued pursuant thereto, to assure the full and proper payment of said rates.
    - (b) Workmen shall be paid no less than such general prevailing minimum wage rates and such other provisions to assure payment thereof as heretofore set forth in this Section.
    - (c) The contract provisions shall apply to all work performed on the contract by the contractor by the

contractor and to all work performed on the contract by all subcontractors.

- (d) The contractor shall insert in each of his subcontracts all of the stipulations contained in these required provisions and such other stipulations as may be required.
- (e) No workmen may be employed on the public work except in accordance with the classifications set forth in the decisions of the Secretary. In the event that additional or different classifications are necessary the procedure set forth in Section 7 of these Regulations shall be followed.
- (f) All workmen employed or working on the public work shall be paid unconditionally, regardless of whether any contractual relationship exists or the nature of any contractor, subcontractor and workmen, not less than once a week without deduction or rebate, on any account, either directly or indirectly, except authorized deductions, the full amounts due at the time of payment, computed at the rates applicable to the time worked in the appropriate classification. Nothing in the contract, the Act or these Regulations shall prohibit the payment of more than the general prevailing minimum way rates as determined by the Secretary to any workman on public work.
- (g) The contractor and each subcontractor shall post for the entire period of construction the wage determination decisions of the Secretary, including the effective date of any changes thereof, in a prominent and easily accessible place or places at the site of the work and at such place or places used by them to pay workmen their wages. The posted notice of wage rates must contain the following information:
  - 1. Name of Project.
  - 2. Name of public body of which it is being constructed.
  - 3. The crafts and classifications of workmen listed in the Secretary's general prevailing minimum wage rate determinations for the particular project.
  - 4. The general prevailing minimum way rates determined for each craft and classification and the effective date of any changes.
  - 5. A statement advising workmen that if they have been paid less than the general prevailing minimum wage rate for their job classification or that the contractor and/or subcontractor are not

complying with the Act or these Regulations in any manner whatsoever they may file a protest with the Secretary of Labor and Industry. Any workmen paid less than the rate specified in the contract shall have a civil right of action for the difference between the wages paid and the wages stipulated in the contract, which right of action must be exercised within six (6) months from the occurrence of the event creating such right.

- (h) The contractor and all subcontractors shall keep an accurate record showing the name, craft and/or classification, number of hours worked per day, and the actual hourly rate of wage paid (including employee benefits) to each workman employed by him in connection with the public work and such record must include any deductions from each workman. The record shall be preserved for two years from the date of payment and shall be open at all reasonable hours to the inspection of the public body awarding the contract and to the Secretary or his duly authorized representative.
- (i) Apprentices shall be limited to such numbers as shall be in accordance with a bona fide apprenticeship program registered with and approved by the Pennsylvania Apprenticeship and Training Council and only apprentices whose training and employment are in full compliance with the provisions of the Apprenticeship and Training Act approved July 14, 1961 (Act No. 304) and the Rules and Regulations issued pursuant thereto shall be employed on the public work project. Any workman using the tools of a craft who does not qualify as an apprentice within the provisions of this subsection shall be paid the rate predetermined for journeymen in that particular craft and/or classification.
- (j) Wages shall be paid without any deductions except authorized deductions. Employers not parties to a contract requiring contributions for employee benefits which the Secretary has determined to be included in the general prevailing minimum wage rate shall pay the monetary equivalent thereof directly to the workmen.
- (k) Payment of compensation to workmen for work performed on public work on a lump sum basis, or a piece work system, or a price certain for the compensation of a certain amount of work, or the production of a certain result shall be deemed a violation of the Act and these Regulations, regardless of the average hourly earnings resulting therefrom.

- (l) Each contractor and each subcontractor shall file a statement each week and a final statement at the conclusion of the work on the contract with the contracting agency, under oath, and in form satisfactory to the Secretary, certifying that all workmen have been paid wages in strict conformity with the provisions if any wages remain unpaid to set forth the amount of wages due and owing to each workman respectively.
  - (m) The provisions of the Act and these Regulations are incorporated by reference in the contract.
- 3) If a Petition for Review is filed, the Awarding Agency will extend the closing date for submission of bids until five (5) days after final determination of the Secretary of Labor and Industry (Section 8, Paragraph 2).
  - 4) The Awarding Agency will notify all interested parties of extension of closing date for submission of bids. (Section 8, Paragraph 3).
  - 5) The Awarding Agency will enforce the posting of wage rate determinations at the job site (Section 9 of the Act and Regulation Section 9.104, Paragraph (b)).
  - 6) The contractor and all subcontractors shall file weekly wage certifications. Copy of approved form will be provided (Section 10 (a) of the Act and Regulation Section 9.110, Paragraph (a)).
  - 7) Before final payment is made, final wage certifications from all contractors and subcontractors (Section 19 (a)) shall be submitted to the Awarding Agency.
  - 8) When notified by Secretary of Labor and Industry of the filing of wage claims by workmen, the awarding agency may withhold from the monies due to the contractor or subcontractor sufficient funds to pay all claims determined to be valid and when so directed by the Secretary of Labor and Industry, should pay wages directly to the workmen (Section 10 (b)).
  - 9) Where an awarding agency has knowledge that any person or firm has failed to pay the rates predetermined, it will notify the Secretary of Labor and Industry in writing (Section 11 (a)).

#### 9.6.3.8 STANDARD OF QUALITY:

The various materials and products specified in the specifications by name or description are given to establish a standard of quality and of cost for bid purposes. It is not the intent to limit the acceptance to any one material or product specified, but rather to name or describe it as the absolute minimum standard that is desired and acceptable. A material or product of lesser quality would not be acceptable. Where proprietary names



are used, whether or not followed by the words "or as approved equal", they shall be subject to equals only as approved by the architect and/or engineer.

9.6.3.9 NO CASH ALLOWANCES:

No cash allowances for any purpose are included in the specifications of this project.

9. Article 9, paragraph 9.8.1 the first sentence is deleted and replaced as follows:

The General Construction Contractor, promptly after being award the Contract, shall coordinate with the other Project Contractors to prepare and submit for the Owner's and Architect's information a construction schedule for the total project Work.

10. Article 9, At the end of Subparagraph 9.12 add:

If the respective Contractor fails to clean up, the Owner may do so and the cost thereof shall be charged to the respective Contractor. If a dispute arises between the Contractor and subcontractor as to their responsibility for the cleaning up, the Owner may clean up and charge the cost thereof to the respective Contractor as the Owner shall determine to be just.

11. Article 9, At the end of Subparagraph 9.15.2 add:

9.15.3 Should Contractor cause damage to the work or property of any separate contractor at the site, or should any claim arising out of Contractor's performance of the Work at the site be made by any separate contractor against Contractor, Owner, Engineer, the Construction Coordinator or any person, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by arbitration or at law. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner, Engineer and the Construction Coordinator harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially of any action, legal or equitable, brought by any separate contractor against Owner, Engineer or the Construction Coordinator to the extent based on a claim arising out of the Contractor's performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of Work by any separate contractor at the site give rise to any other claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer or the Construction Coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner, Engineer or the Construction Coordinator on account of any such damage or claim. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Time attributable thereto, Contractor may make a claim for an extension of time in accordance with Article 12. An extension of Contract Time shall be Contractor's exclusive remedy with respect to Owner, Engineer and Construction Coordinator for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not prevent recovery from Owner, Engineer or Construction Coordinator or activities that are their respective responsibilities.

12. Article 9, After Subparagraph 9.15.2 add:

9.16 Contractor's responsibility shall include repairing, replacing, or restoring damaged property to its original or better conditions, or the payment of money in a sum equal to the reasonable value of the damage caused to such property. If Contractor fails to promptly repair or replace damaged property, Owner may have the work performed by others and the cost of such work shall be deducted from Contractor's subsequent progress payment.

13. Article 10, After Subparagraph 10.9 add:

10.10 The Architect shall give the Contractor all desired assistance in interpreting specifications, drawings, or written instructions. Such assistance or lack thereof shall not relieve the Contractor from its responsibility to perform the Work in accordance with the Contract Documents.

The fact that the Architect has permitted faulty work, or work to be performed not in accordance with the Contract Documents will not prevent the Architect or Owner from requiring that the Contractor corrects any faults or incorrect construction immediately.

The Architect may not enter into any agreement with a Subcontractor which binds the Owner to make payments for work performed by the Subcontractor absent express written permission by the Owner for the specific work and Subcontractor involved.

14. Article 12, After Article 12.3 add:

12.4 The General Construction Contractor will have the authority and responsibility for scheduling and coordination of the activities among the various prime contractors at the building. If any part of a Contractor's Work depends for proper execution or results upon the work of any such other Contractor, the Contractor shall inspect and promptly report to Architect in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. Contractor's failure so to report will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work except for latent or non-apparent defects and deficiencies in the other work.

15. Article 13, After Subparagraph 13.1 add:

13.1.1 When submitting a Change Order request, the Contractor shall provide such information as the Architect and Resident Project Representative may require for the preparation of the Change Order in accordance with the General Conditions. Such information may include, but not be limited to, the following:

Itemized description of the addition, deletion, or revision to the Work.

Itemized description of the change in the Contract Price, including itemized contractor's /subcontractor's labor costs and materials pricing data to enable determination of the necessity and reasonableness of the costs. For work performed by subcontractor(s), documentation may require submittal of actual invoices.

Description of the change, if any, in the Contract Time. The Contractor shall submit adequate documentation to satisfactorily prove that the nature of the delay actually and unavoidably will impact the Contract Times.

16. Article 14, After Subparagraph 14.5, add:

14.6 Regular or working hours for the Project are defined as 7:00 A.M. to 5:00 P.M. Monday through Friday. If Owner consents to Contractor working during non-regular hours or on

Saturday, Sunday, or any legal holiday, Contractor shall reimburse Owner for wages, salaries, and expenses paid to Owner's and Architect's personnel which, in the Owner's Judgment are required to be present at the Project Site during the Contractor's Work. Contractor's reimbursement to Owner for these extra personnel costs will be in the form of a deduction from a progress payment. Contractor's superintendent shall also be present during performance of Work during non-regular hours, or on Saturday, Sunday, or any legal holiday.

14.6 In planning his construction schedule within the agreed Contract Time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Engineer.

14.7 When the Contract Time has been extended, as provided per the Agreement, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative costs or other such reasons.14. Article 15, At the end of subparagraph 15.1.1, add:

The form of application for payment shall be AIA Document G702, "Application and Certificate for Payment," supported by continuation sheet or sheets approved by the Engineer.

17. Article 15, After Subparagraph 15.1.1 add:

15.1.1.1 If, in the opinion of the Architect, the preliminary schedule of values is distorted, the Contractor shall provide substitution of the questioned items in the form of executed subcontracts or Purchase Orders.

18. Article 15, After Subparagraph 15.4.4 add:

15.4.5 In the event the project is substantially complete but one or more items remain to be completed or are in dispute between Owner or Contractor, the parties shall value the items in dispute. Owner shall retain a sum equal to 150% of such value as recommended by the Engineer, and shall pay the balance of the retainage to Contractor. In the event Owner is found to have retained in excess of 150% of the value of the items in dispute by a Board of Arbitration, Owner shall pay Contractor interest on such monies for the period of the excess retainage at the rate of six percent (6%) percent per annum.

19. Article 15, After Subparagraph 15.6.5 add:

15.6.5 If, after Substantial Completion of the work, final completion thereof is materially delayed through no fault of the Contractor, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed 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 surety is to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

20. Article 16, After Subparagraph 16.2.3 add:

16.3 The Contractor shall provide during non-working hours a maintenance crew to correct conditions which are hazardous to the public or detrimental to proper system operation. If the Contractor refuses or fails to correct the problem within a reasonable period of time, the Owner

will have the necessary corrections performed by other and the full cost of the work shall be deducted from Contractor's subsequent Applications for Payment. The names, addresses, and telephone numbers of the Contractor's emergency repair personnel shall be submitted to the Owner and Architect at the pre-construction conference. In the event of an emergency if Contractor refuses or fails to respond to Owner's directive to make necessary corrections Owner may stop work immediately without seven days' written notice as required by General Conditions Paragraph 14.2.

21. Article 17, Subparagraphs 17.1.1 through 17.1.9 are deleted, and replaced with the following:

17.1 Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance and furnishing of the Work and Contractor's other obligations under the Contract obligations under the Contract Documents, whether it is to be performed or furnished by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the work, or by anyone for whose acts any of them may be liable. The Contractor's insurance agent shall indicate on the insurance certificate or by separate letter that the limits required herein and shown on the certificate have not been reduced by an outstanding claim. Before any works is started, the Contractor shall deliver to Owner, with a copy to Engineer, the insurance certificates required by Section 11.

17.1.1 Claims under workers' compensation, disability, benefits and other similar employee benefit acts;

17.1.2 Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

17.1.3 Claims for damages insured by bodily injury, sickness or disease, or death of any person other than Contractor's employees;

17.1.4 Claims for damages insured by customary personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (ii) by any other person for any other reason;

17.1.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

17.1.6 Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle. The policies of insurance so required by this Paragraph 11.1.2 to be purchased and maintained shall:

17.1.7 The limits of liability for the insurance required by Paragraph 17.1.10 shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations; Contractor shall be responsible for any deductible or self-insured retention.

Type of Coverage Minimum Limits

Workers' Compensation (Including coverage under

United States Longshoremen's and Harbor Workers Act, where applicable) and Employers' Liability (Statutory):

Each Accident \$100,000

Disease — Each Employee \$100,000

Disease — Policy Limit \$500,000

Comprehensive General (Public) Liability, including the following:

- (1) XCU coverage covering explosion, collapse, underground damage.
- (2) Products — Completed Operations Coverage until two years after final payment to be provided by endorsement or issuance of separate policy of insurance in name of Owner.
- (3) Contractual Liability insuring the hold harmless and indemnification provisions of the Contract Documents.
- (4) Blasting hazards where applicable.
- (5) Personal Injury:

Bodily Injury and \$3,000,000

Property Damage combined single limit

Type of Coverage Minimum Limits

Contractor's Protective Liability (if subcontractor's are employed);

Bodily Injury and Property Damage \$3,000,000 Combined Single Limit

Motor Vehicle Liability:

Bodily Injury and Property Damage \$1,000,000 Ccombined Single Limit

Excess Liability; Umbrella Form (\*)

(\*) If Contractor has lower underlying coverage than required above, Contractor may provide additional minimum coverage to \$3,000,000 by excess or umbrella form

Environmental Pollution Legal Liability \$500,000 Each Occurrence

Note that the Environmental Pollution Legal Liability insurance is required by all prime contractors.

Builder's Risk

The Owner shall purchase and maintain Builder's Risk property insurance upon the Work in the full amount of the cumulative Contract Prices (subject to such deductible amounts as may be provided in these Supplementary Conditions or required by Laws and Regulations); This insurance shall:

(1) Include the interest of Owner, Contractor, Subcontractor, Engineer, Engineer's Consultants, each of which is deemed to have an insurable interest and shall be listed as an insured or additional insured.

(2) Be written on an Builder's Risk "all-risk" or open peril or special causes loss policy from that shall at least include insurance for physical damage to Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris, removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specially required by the Supplementary Conditions.

(3) Include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of architects).

(4) Cover materials and equipment in transit, for incorporation in the Work, or stored at the Project site, or at another location, that was agreed to in writing by Owner prior to being incorporated in the Work; provided that such materials and equipment have included in an Application for Payment recommended by Architect.

(5) Be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Architect with thirty days written notice to each other additional insured to whom a certificate of insurance has been issued.

22. Article 17, After Subparagraph 17.3.1 add:

All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

Each Prime Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor's is required to purchase and maintain in accordance with Supplementary Conditions Paragraph 11.1.2.

Each Prime Contractor shall submit evidence of required insurance coverage on the most current Acord 25 "Certificate of Insurance" form. All the policies of insurance required to be purchased and maintained by Contractor shall not be cancelled or materially changes until thirty days prior notice has been given by Contractor to Owner and Architect and to each additional insured and shall contain waiver provisions in accordance with General Conditions Paragraph 11.3.7.

23. Article 17, After Subparagraph 17.3.2 add:

17.3.3 Each Prime Contractor shall furnish Performance and Payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all Contractor's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by the Contract Documents.

17.3.4 Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Financial Management Service, Surety Bond Branch, U.S. Treasury Department, (Phone 202-874-6850). All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

24. Article 17, After Subparagraph 17.3.4 add:

**17.4 Warranty Bond**

17.4.1 Each Prime Contractor shall furnish a Warranty Bond in accordance with AIA Document A313-202 covering faithful performance of the Contract and warranty obligations arising thereunder as stipulated in the Contract documents on the date of execution of the contract.

17.4.2 Upon the request of the Owner, the Contractor shall promptly furnish a copy of the bonds associated with the warranty of the work performed by the Contractor.

17.4.3 Each Prime Contractor shall furnish a Warranty Bond, in an amount at least equal to ten percent (10%) of the Contract Price as security for the faithful warranty of the Contractor's work under the Contract Documents. This Bond shall remain in effect at least until two years after the date when final payment becomes due, except as provided otherwise by the Contract Documents.

17.3.4 Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Financial Management Service, Surety Bond Branch, U.S. Treasury Department, (Phone 202-874-6850). All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

25. Article 19, After Subparagraph 19.6 add:

19.7 If there are any conflicts, errors, ambiguities, or discrepancies within the Contract Documents, the documents shall be interpreted in the following order of precedence: (1) Agreement, together with all Written Amendments, (2) Supplementary Conditions, (3) Standard General Conditions, (4) Specifications together with all Written Amendments, Change Orders, Work Orders, Change Directives, Field Orders, and Architect's written interpretations and clarifications, (5) Drawings as more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Orders, Change Directives, Field Orders and Architect's written interpretations and clarifications.

26. Article 21, After Subparagraph 21.1 add:

The Engineer's written decision on claims, disputes, or appeals from Engineer's decision is taken within thirty days of the date of Engineer's written decision to the Court of Common Pleas of Franklin County, Pennsylvania. The Owner and Contractor may mutually agree to submit such claim, dispute, or other matter to voluntary mediation or arbitration following the written decision of the Architect. When functioning as interpreter and judge under subparagraph 21.1, Architect will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to subparagraph 21.1 with respect to any such claim, dispute or other matter

(except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter pursuant to the Contract Documents.

27. Article 4, after Subparagraph 4.1.4 add:

The project retainage shall be ten percent of the total work completed as of the date of each invoice and reduced to five percent (5%) when the amount of work completed to date exceeds fifty percent (50%) of the contract amount.

END OF SUPPLEMENTARY CONDITIONS





# AIA<sup>®</sup> Document A312<sup>™</sup> – 2010

## Performance Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

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

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

**CONSTRUCTION CONTRACT**

Date:

Amount:

Description:

*(Name and location)*

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount:

Modifications to this Bond:  None  See Section 16

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name  
and Title:

*(Any additional signatures appear on the last page of this Performance Bond.)*

Signature: \_\_\_\_\_

Name  
and Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

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

#### § 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

Sample

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Name and Title:

Address

Signature: \_\_\_\_\_

Name and Title:

Address



**AIA**<sup>®</sup>

# Document A312<sup>™</sup> – 2010

## Payment Bond

**CONTRACTOR:**

*(Name, legal status and address)*

**SURETY:**

*(Name, legal status and principal place of business)*

**OWNER:**

*(Name, legal status and address)*

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

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

**CONSTRUCTION CONTRACT**

Date:

Amount:

Description:

*(Name and location)*

**BOND**

Date:

*(Not earlier than Construction Contract Date)*

Amount:

Modifications to this Bond:  None  See Section 18

**CONTRACTOR AS PRINCIPAL**

Company: *(Corporate Seal)*

**SURETY**

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_

Name

and Title:

*(Any additional signatures appear on the last page of this Payment Bond.)*

Signature: \_\_\_\_\_

Name

and Title:

*(FOR INFORMATION ONLY — Name, address and telephone)*

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**

*(Architect, Engineer or other party:)*

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

- § 5.1 Claimants, who do not have a direct contract with the Contractor,
- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
  - .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

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

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

#### § 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

Sample

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Address \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Address \_\_\_\_\_





# AIA Document A313™ – 2020

## Warranty Bond

**CONTRACTOR/PRINCIPAL:**  
*(Name, legal status, and address)*

**SURETY:**  
*(Name, legal status, and address)*

**OWNER/OBLIGEE:**  
*(Name, legal status, and address)*

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

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

### CONSTRUCTION CONTRACT

Date:

Description:  
*(Name and location)*

### BOND

Term of the Bond

The Term of this Bond commences on the date of final completion under the Construction Contract and continues for a period of 2 years, unless otherwise specified below, notwithstanding a longer warranty period set forth in the Construction Contract.

Amount of this Bond: \$

Modifications to this Bond:  None  See Section 16

### CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

### SURETY

Company: *(Corporate Seal)*

Signature: \_\_\_\_\_  
Name and Title:  
*(Any additional signatures appear on the last page of this Warranty Bond.)*

Signature: \_\_\_\_\_  
Name and Title:  
*(Any additional signatures appear on the last page of this Warranty Bond.)*

*(FOR INFORMATION ONLY — Name, address, and telephone)*

**AGENT or BROKER:**

**OWNER'S REPRESENTATIVE:**  
*(Architect, Engineer, or other party:)*

§ 1 During the Term of the Bond, the Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the Contractor's warranty obligations set forth in the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor satisfies its warranty obligations under the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond. It is understood and agreed that in no event shall the Surety's obligations under this Bond extend to warranties provided by the Contractor's suppliers and manufacturers.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

- .1 the Owner first provides notice to the Contractor and the Surety during the Term of the Bond of the Owner's intent to declare a Contractor Default;
- .2 the Contractor fails to remedy the Contractor Default within a reasonable amount of time of such notice; and,
- .3 the Owner declares a Contractor Default and notifies the Surety.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly, under reservation of rights, and at the Surety's expense, remedy the Contractor's Default. The Surety may, with the consent of the Owner, arrange for the Contractor to remedy the Contractor's Default.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 The responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. The Surety is obligated, without modification or qualification, for the responsibilities of the Contractor for correction of defective work as set forth in the Construction Contract, and additional legal and design professional costs resulting from the Contractor's Default or resulting from the actions or failure to act of the Surety under Section 5.

§ 8 The Owner may request an extension of the Term of this Bond. The Surety, at its sole option, may extend the Term of this Bond by continuation certificate or rider setting forth the new expiration date.

- .1 If the Surety extends the Term of this Bond, the Bond shall be considered one continuous bond.
- .2 If the Surety decides not to extend the Term of this Bond, then the Surety shall notify the Owner in writing thirty (30) days prior to the end of the current term of this Bond at the address indicated on page 1.
- .3 Neither the Surety's failure to extend the Term of this Bond nor the Contractor's failure to provide a replacement bond or other acceptable security shall be considered a breach or default by the Surety or Contractor on this Bond, nor serve as a basis for a claim or demand on this Bond.

§ 9 The Surety's total liability under this Bond is limited to the Amount of this Bond indicated on Page 1, regardless of whether the Term of this Bond is extended, the length of time this Bond remains in force, and the number of premiums that shall be payable or paid.

§ 10 No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work of the Contractor required by the Construction Contract is located and shall be instituted within two years after a declaration of Contractor Default. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be in writing and mailed or delivered to the address shown on the first page of this Bond.

§ 13 Provisions in this Bond that conflict with applicable statutory or other legal requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein.

§ 14 Definitions

§ 14.1 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.2 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with the warranties required under the Construction Contract.

§ 14.3 Owner Default. Failure of the Owner, which has not been remedied or waived, to perform or otherwise comply with the other material terms of the Construction Contract.

§ 14.4 Contract Documents. All the documents that comprise the Construction Contract.

§ 14.5 Surety. The company or companies lawfully authorized to issue surety bonds in the jurisdiction where the project is located.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this Bond are as follows:

*(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)*

**CONTRACTOR AS PRINCIPAL**

**SURETY**

Company:

*(Corporate Seal)*

Company:

*(Corporate Seal)*

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Address \_\_\_\_\_

Address \_\_\_\_\_



CERTIFICATE OF NON SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in this files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. § 1001.

Date \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(Name of Bidder)

Official Address  
(including Zip Code):

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

By: \_\_\_\_\_

\_\_\_\_\_  
(Title)



NON-COLLUSION AFFIDAVIT

Contract/Bid No. 22015-D

State of: \_\_\_\_\_ :  
County of: \_\_\_\_\_ : ss

I state that I am \_\_\_\_\_ of \_\_\_\_\_  
(Title) (Firm)

and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

1. The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder or potential bidder.
2. Neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
4. The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
5. \_\_\_\_\_ (Firm), its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

I state that \_\_\_\_\_ (Firm) understands and Acknowledges that the above responsibilities are material and important and will be relied on by the Owner in awarding the Contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the SOUTHAMPTON TOWNSHIP - FRANKLIN COUNTY WELCOME CENTER of the true facts relating to the submission of bids for this contract.

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(Name and Company Position)

SWORN TO AND SUBSCRIBED  
BEFORE ME THIS \_\_\_\_\_ DAY  
OF \_\_\_\_\_ 2024.

My Commission Expires:

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NOTICE OF AWARD

Dated \_\_\_\_\_

TO: \_\_\_\_\_  
Contractor  
\_\_\_\_\_  
Address

OWNER's CONTRACT NO. 22015-D Contract - Furnace Run Park Welcome Center

CONTRACT FOR Southampton Township - Franklin County  
705 Municipal Drive  
Shippensburg, PA 17257

Gentlemen:

You are notified that your Bid dated May 23, 2024 for the above Contract has been considered. You are the apparent Successful Bidder and are hereby notified that the Owner, represented by the undersigned, intends to award a contract to you for General Construction Contract work.

The Contract Price of your contract is \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ .00), including the additions and deductions as provided in Exhibit E - Additional Documentation in the Contract Documents for

Three (3) copies of the project Contract Documents and Drawings are attached.

You must comply with the following conditions precedent within seven (7) days of the date of this Notice of Award, that is by \_\_\_\_\_:

1. You must deliver to the office of the Engineer three (3) executed counterparts of the Agreement, including all the Contract Documents, properly signed by you as the Contractor. This includes the triplicate sets of Drawings. Each of the Contract Documents and Drawings must bear original signatures on the signature pages and cover pages.
2. You must deliver, with the signed Agreement, the Certificate of Insurance as specified in the General Conditions (Article 11) and Supplementary Conditions (paragraph 7).

Please make these submissions to our Engineer:

David Black Associates, Inc.  
501 Lincoln Way East  
Chambersburg, Pennsylvania, 17201

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid in default, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten (10) days after you comply with the above conditions, OWNER will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

Please execute the Acceptance of this Notice and return one copy to the Engineer, David Black Associates, Inc., 501 Lincoln Way East, Chambersburg, Pennsylvania.

ENGINEER: DAVID BLACK ASSOCIATES, INC.

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

David J. Black  
\_\_\_\_\_  
(Typed Name)

President  
\_\_\_\_\_  
(Title)

ACCEPTANCE OF NOTICE

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

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

\_\_\_\_\_  
(Typed Name)

\_\_\_\_\_  
(Title)

NOTICE TO PROCEED

To: \_\_\_\_\_

Contract No. 22015-D CONTRACT

Description of Work: Furnace Run Park Welcome Center

For: Southampton Township - Franklin County  
705 Municipal Drive  
Shippensburg, PA 17257

Gentlemen:

On behalf of the Owner, Southampton Township - Franklin County, you are Notified that the Contract times under the above contract will commence to run on \_\_\_\_\_, 2024. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 3 of the Agreement the dates of Substantial Completion and completion and readiness for final payment are \_\_\_\_\_, 2024 and \_\_\_\_\_, 2024.

One (1) copy of the fully executed Agreement will be delivered to your office separately.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2024.

DAVID BLACK ASSOCIATES, INC.

By: \_\_\_\_\_  
David J. Black, P.E.

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged This \_\_\_\_\_ Day of \_\_\_\_\_, 2024.

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

\_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(Typed Name)

\_\_\_\_\_  
(Title)



**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

Project Name:	Furnace Run Park Welcome Center
Awarding Agency:	Southampton Township
Contract Award Date:	4/2/2024
Serial Number:	24-01480
Project Classification:	Building
Determination Date:	2/15/2024
Assigned Field Office:	Harrisburg
Field Office Phone Number:	(717)787-4763
Toll Free Phone Number:	(800)932-0665
Project County:	Franklin County

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

Project: 24-01480 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	6/26/2023		\$38.70	\$29.11	\$67.81
Asbestos & Insulation Workers	7/1/2024		\$35.80	\$34.06	\$69.86
Boilermakers	1/1/2023		\$51.27	\$35.30	\$86.57
Boilermakers	1/1/2024		\$52.10	\$35.72	\$87.82
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/30/2023		\$38.27	\$18.18	\$56.45
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	4/28/2024		\$40.12	\$18.18	\$58.30
Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners	5/4/2025		\$41.97	\$18.18	\$60.15
Carpenters - Piledriver/Welder	1/1/2023		\$40.63	\$21.22	\$61.85
Carpenters - Piledriver/Welder	1/1/2024		\$42.13	\$21.97	\$64.10
Carpenters - Piledriver/Welder	1/1/2025		\$43.38	\$22.72	\$66.10
Carpenters - Piledriver/Welder	1/1/2026		\$44.63	\$23.47	\$68.10
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2023		\$33.01	\$18.41	\$51.42
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2024		\$33.97	\$18.95	\$52.92
Cement Finishers & Plasterers	4/30/2023		\$28.23	\$22.27	\$50.50
Cement Finishers & Plasterers	4/28/2024		\$30.23	\$22.27	\$52.50
Cement Finishers & Plasterers	5/4/2025		\$32.23	\$22.27	\$54.50
Cement Finishers & Plasterers	5/3/2026		\$34.23	\$22.27	\$56.50
Cement Masons	5/1/2023		\$32.90	\$22.70	\$55.60
Drywall Finisher	5/1/2023		\$30.10	\$22.14	\$52.24
Electricians	6/1/2023		\$37.00	\$26.67	\$63.67
Electricians	6/1/2024		\$37.00	\$30.51	\$67.51
Electricians	6/1/2025		\$37.00	\$32.50	\$69.50
Elevator Constructor	1/1/2023		\$53.93	\$38.34	\$92.27
Elevator Constructor	1/1/2024		\$60.76	\$39.19	\$99.95
Glazier	5/1/2023		\$31.23	\$20.66	\$51.89
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2023		\$36.26	\$31.38	\$67.64
Laborers (Class 01 - See notes)	1/1/2023		\$25.31	\$17.29	\$42.60
Laborers (Class 01 - See notes)	1/1/2024		\$26.31	\$17.79	\$44.10
Laborers (Class 02 - See notes)	1/1/2023		\$28.06	\$17.29	\$45.35
Laborers (Class 02 - See notes)	1/1/2024		\$29.56	\$17.79	\$47.35
Laborers (Class 03 - See notes)	1/1/2023		\$27.66	\$17.29	\$44.95
Laborers (Class 03 - See notes)	1/1/2024		\$28.66	\$17.79	\$46.45
Laborers (Class 04 - See notes)	1/1/2023		\$24.31	\$17.29	\$41.60
Laborers (Class 04 - See notes)	1/1/2024		\$25.31	\$17.79	\$43.10
Landscape Laborer (Skilled)	1/1/2023		\$23.79	\$18.28	\$42.07
Landscape Laborer (Skilled)	1/1/2024		\$24.79	\$18.53	\$43.32
Landscape Laborer (Skilled)	1/1/2025		\$25.79	\$18.78	\$44.57
Landscape Laborer (Skilled)	1/1/2026		\$26.79	\$19.03	\$45.82
Landscape Laborer (Tractor Operator)	1/1/2023		\$24.09	\$18.28	\$42.37
Landscape Laborer (Tractor Operator)	1/1/2024		\$25.09	\$18.53	\$43.62

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

Project: 24-01480 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Landscape Laborer (Tractor Operator)	1/1/2025		\$26.09	\$18.78	\$44.87
Landscape Laborer (Tractor Operator)	1/1/2026		\$27.09	\$19.03	\$46.12
Landscape Laborer	1/1/2023		\$23.37	\$18.28	\$41.65
Landscape Laborer	1/1/2024		\$24.37	\$18.53	\$42.90
Landscape Laborer	1/1/2025		\$25.37	\$18.78	\$44.15
Landscape Laborer	1/1/2026		\$26.37	\$19.03	\$45.40
Marble Mason	5/1/2023		\$34.80	\$17.74	\$52.54
Marble Mason	5/1/2024		\$36.75	\$17.74	\$54.49
Marble Mason	5/1/2025		\$38.70	\$17.74	\$56.44
Millwright	6/1/2023		\$39.21	\$22.95	\$62.16
Millwright	6/1/2024		\$41.07	\$22.95	\$64.02
Millwright	6/1/2025		\$43.00	\$22.95	\$65.95
Millwright	6/1/2026		\$44.97	\$22.95	\$67.92
Operators (Class 01 - see notes)	7/1/2023		\$35.87	\$20.92	\$56.79
Operators (Class 01 - see notes)	7/1/2024		\$36.87	\$21.42	\$58.29
Operators (Class 02 -see notes)	7/1/2023		\$31.25	\$20.92	\$52.17
Operators (Class 02 -see notes)	7/1/2024		\$32.87	\$21.42	\$54.29
Operators (Class 03 - See notes)	7/1/2023		\$28.70	\$20.92	\$49.62
Operators (Class 03 - See notes)	7/1/2024		\$29.70	\$21.42	\$51.12
Operators (Class 04 - Chief of Party (Surveying and Layout))	7/1/2022		\$26.60	\$20.62	\$47.22
Operators (Class 04 - Chief of Party (Surveying and Layout))	7/1/2023		\$28.30	\$20.92	\$49.22
Operators (Class 04 - Chief of Party (Surveying and Layout))	7/1/2024		\$29.30	\$21.42	\$50.72
Operators (Class 04 - Instrument Person (Surveying & Layout))	7/1/2022		\$25.60	\$20.62	\$46.22
Operators (Class 04 - Instrument Person (Surveying & Layout))	7/1/2023		\$27.30	\$20.92	\$48.22
Operators (Class 04 - Instrument Person (Surveying & Layout))	7/1/2024		\$28.30	\$21.42	\$49.72
Operators (Class 04 - Rodman/Chainman (Surveying and Layout))	7/1/2022		\$25.15	\$20.62	\$45.77
Operators (Class 04 - Rodman/Chainman (Surveying and Layout))	7/1/2023		\$26.85	\$20.92	\$47.77
Operators (Class 04 - Rodman/Chainman (Surveying and Layout))	7/1/2024		\$27.85	\$21.42	\$49.27
Painters Class 1 (see notes)	5/1/2023		\$27.02	\$17.54	\$44.56
Painters Class 2 (see notes)	5/1/2020		\$27.43	\$15.99	\$43.42
Painters Class 3 (see notes)	5/1/2020		\$33.18	\$15.99	\$49.17
Pile Driver Divers (Building, Heavy, Highway)	1/1/2023		\$58.70	\$21.22	\$79.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2024		\$60.95	\$21.97	\$82.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		\$62.82	\$22.72	\$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		\$64.70	\$23.47	\$88.17
Piledrivers	1/1/2023		\$39.13	\$21.22	\$60.35
Piledrivers	1/1/2024		\$40.63	\$21.97	\$62.60
Piledrivers	1/1/2025		\$41.88	\$22.72	\$64.60

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 24-01480 - Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Piledrivers	1/1/2026		\$43.13	\$23.47	\$66.60
Plasterers	5/1/2023		\$31.33	\$20.83	\$52.16
Plumber/Pipefitter	5/1/2023		\$41.36	\$29.72	\$71.08
Roofers (Composition)	5/1/2023		\$42.63	\$34.62	\$77.25
Roofers (Shingle)	5/1/2023		\$32.85	\$22.10	\$54.95
Roofers (Slate & Tile)	5/1/2023		\$35.85	\$22.10	\$57.95
Sheet Metal Workers	6/1/2022		\$40.22	\$41.01	\$81.23
Sheet Metal Workers	6/1/2023		\$41.41	\$42.32	\$83.73
Sign Makers and Hangars	7/15/2022		\$30.54	\$24.35	\$54.89
Sign Makers and Hangars	7/15/2023		\$31.76	\$24.63	\$56.39
Sprinklerfitters	4/1/2023		\$44.33	\$28.04	\$72.37
Terrazzo Finisher	5/1/2023		\$35.79	\$19.25	\$55.04
Terrazzo Finisher	5/1/2024		\$37.16	\$19.26	\$56.42
Terrazzo Grinder	5/1/2023		\$36.54	\$19.25	\$55.79
Terrazzo Grinder	5/1/2024		\$37.92	\$19.26	\$57.18
Terrazzo Mechanics	5/1/2023		\$36.51	\$21.00	\$57.51
Terrazzo Mechanics	5/1/2024		\$37.94	\$21.01	\$58.95
Tile & Marble Finisher	5/1/2023		\$32.91	\$15.49	\$48.40
Tile & Marble Finisher	5/1/2024		\$34.86	\$15.49	\$50.35
Tile & Marble Finisher	5/1/2025		\$36.81	\$15.49	\$52.30
Tile Setter	5/1/2023		\$34.80	\$17.74	\$52.54
Tile Setter	5/1/2024		\$36.75	\$17.74	\$54.49
Tile Setter	5/1/2025		\$38.70	\$17.74	\$56.44
Truckdriver class 1(see notes)	1/1/2023		\$33.04	\$22.13	\$55.17
Truckdriver class 1(see notes)	1/1/2024		\$34.79	\$22.63	\$57.42
Truckdriver class 1(see notes)	1/1/2025		\$36.29	\$23.13	\$59.42
Truckdriver class 1(see notes)	1/1/2026		\$37.79	\$23.63	\$61.42
Truckdriver class 2 (see notes)	1/1/2023		\$33.50	\$22.43	\$55.93
Truckdriver class 2 (see notes)	1/1/2024		\$35.25	\$22.93	\$58.18
Truckdriver class 2 (see notes)	1/1/2025		\$36.75	\$23.43	\$60.18
Truckdriver class 2 (see notes)	1/1/2026		\$38.25	\$23.93	\$62.18
Truckdriver class 3 (see notes)	1/1/2016		\$28.10	\$16.88	\$44.98
Window Film / Tint Installer	6/1/2019		\$24.52	\$12.08	\$36.60



**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

Project: 24-01480 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2023		\$38.35	\$20.59	\$58.94
Carpenter	1/1/2024		\$39.85	\$21.34	\$61.19
Carpenter	1/1/2025		\$41.10	\$22.09	\$63.19
Carpenter	1/1/2026		\$42.35	\$22.84	\$65.19
Carpenter Welder	1/1/2023		\$39.85	\$20.59	\$60.44
Carpenter Welder	1/1/2024		\$41.35	\$21.34	\$62.69
Carpenter Welder	1/1/2025		\$42.60	\$22.09	\$64.69
Carpenter Welder	1/1/2026		\$43.85	\$22.84	\$66.69
Carpenters - Piledriver/Welder	1/1/2023		\$40.63	\$21.22	\$61.85
Carpenters - Piledriver/Welder	1/1/2024		\$42.13	\$21.97	\$64.10
Carpenters - Piledriver/Welder	1/1/2025		\$43.38	\$22.72	\$66.10
Carpenters - Piledriver/Welder	1/1/2026		\$44.63	\$23.47	\$68.10
Cement Finishers	1/1/2023		\$34.14	\$25.05	\$59.19
Cement Finishers	1/1/2024		\$35.14	\$26.30	\$61.44
Cement Finishers	1/1/2025		\$35.94	\$27.50	\$63.44
Cement Masons	1/1/2020		\$32.84	\$21.10	\$53.94
Electric Lineman	5/29/2023		\$51.40	\$29.62	\$81.02
Electric Lineman	6/3/2024		\$52.80	\$30.61	\$83.41
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2021		\$34.01	\$31.13	\$65.14
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2023		\$36.26	\$31.38	\$67.64
Laborers (Class 01 - See notes)	1/1/2023		\$29.85	\$25.50	\$55.35
Laborers (Class 01 - See notes)	1/1/2024		\$32.10	\$25.50	\$57.60
Laborers (Class 01 - See notes)	1/1/2025		\$33.60	\$26.00	\$59.60
Laborers (Class 01 - See notes)	1/1/2026		\$34.60	\$27.00	\$61.60
Laborers (Class 02 - See notes)	1/1/2023		\$30.01	\$25.50	\$55.51
Laborers (Class 02 - See notes)	1/1/2024		\$32.26	\$25.50	\$57.76
Laborers (Class 02 - See notes)	1/1/2025		\$33.76	\$26.00	\$59.76
Laborers (Class 02 - See notes)	1/1/2026		\$34.76	\$27.00	\$61.76
Laborers (Class 03 - See notes)	1/1/2023		\$30.50	\$25.50	\$56.00
Laborers (Class 03 - See notes)	1/1/2024		\$32.75	\$25.50	\$58.25
Laborers (Class 03 - See notes)	1/1/2025		\$34.25	\$26.00	\$60.25
Laborers (Class 03 - See notes)	1/1/2026		\$35.25	\$27.00	\$62.25
Laborers (Class 04 - See notes)	1/1/2023		\$30.95	\$25.50	\$56.45
Laborers (Class 04 - See notes)	1/1/2024		\$33.20	\$25.50	\$58.70
Laborers (Class 04 - See notes)	1/1/2025		\$34.70	\$26.00	\$60.70
Laborers (Class 04 - See notes)	1/1/2026		\$35.70	\$27.00	\$62.70
Laborers (Class 05 - See notes)	1/1/2023		\$31.36	\$25.50	\$56.86
Laborers (Class 05 - See notes)	1/1/2024		\$33.61	\$25.50	\$59.11
Laborers (Class 05 - See notes)	1/1/2025		\$35.11	\$26.00	\$61.11
Laborers (Class 05 - See notes)	1/1/2026		\$36.11	\$27.00	\$63.11
Laborers (Class 06 - See notes)	1/1/2023		\$28.20	\$25.50	\$53.70
Laborers (Class 06 - See notes)	1/1/2024		\$30.45	\$25.50	\$55.95
Laborers (Class 06 - See notes)	1/1/2025		\$31.95	\$26.00	\$57.95

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 24-01480 - Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Laborers (Class 06 - See notes)	1/1/2026		\$32.95	\$27.00	\$59.95
Laborers (Class 07 - See notes)	1/1/2023		\$30.85	\$25.50	\$56.35
Laborers (Class 07 - See notes)	1/1/2024		\$33.10	\$25.50	\$58.60
Laborers (Class 07 - See notes)	1/1/2025		\$34.60	\$26.00	\$60.60
Laborers (Class 07 - See notes)	1/1/2026		\$35.60	\$27.00	\$62.60
Laborers (Class 08 - See notes)	1/1/2023		\$32.35	\$25.50	\$57.85
Laborers (Class 08 - See notes)	1/1/2024		\$34.60	\$25.50	\$60.10
Laborers (Class 08 - See notes)	1/1/2025		\$36.10	\$26.00	\$62.10
Laborers (Class 08 - See notes)	1/1/2026		\$37.10	\$27.00	\$64.10
Millwright	6/1/2023		\$41.51	\$23.33	\$64.84
Millwright	6/1/2024		\$43.46	\$23.33	\$66.79
Millwright	6/1/2025		\$45.46	\$23.33	\$68.79
Millwright	6/1/2026		\$47.52	\$23.33	\$70.85
Operators (Class 01 - see notes)	1/1/2023		\$36.50	\$23.58	\$60.08
Operators (Class 01 - see notes)	1/1/2024		\$38.30	\$24.03	\$62.33
Operators (Class 01 - see notes)	1/1/2025		\$40.10	\$24.23	\$64.33
Operators (Class 02 -see notes)	1/1/2023		\$36.22	\$23.58	\$59.80
Operators (Class 02 -see notes)	1/1/2024		\$38.02	\$24.03	\$62.05
Operators (Class 02 -see notes)	1/1/2025		\$39.82	\$24.23	\$64.05
Operators (Class 03 - See notes)	1/1/2023		\$32.58	\$23.58	\$56.16
Operators (Class 03 - See notes)	1/1/2024		\$34.38	\$24.03	\$58.41
Operators (Class 03 - See notes)	1/1/2025		\$36.18	\$24.23	\$60.41
Operators (Class 04 - See notes)	1/1/2023		\$32.09	\$23.58	\$55.67
Operators (Class 04 - See notes)	1/1/2024		\$33.89	\$24.03	\$57.92
Operators (Class 04 - See notes)	1/1/2025		\$35.69	\$24.23	\$59.92
Operators (Class 05 - See notes)	1/1/2023		\$31.88	\$23.58	\$55.46
Operators (Class 05 - See notes)	1/1/2024		\$33.68	\$24.03	\$57.71
Operators (Class 05 - See notes)	1/1/2025		\$35.48	\$24.23	\$59.71
Operators Class 1-A	1/1/2023		\$39.50	\$23.58	\$63.08
Operators Class 1-A	1/1/2024		\$41.30	\$24.03	\$65.33
Operators Class 1-A	1/1/2025		\$43.10	\$24.23	\$67.33
Operators Class 1-B	1/1/2023		\$38.50	\$23.58	\$62.08
Operators Class 1-B	1/1/2024		\$40.30	\$24.03	\$64.33
Operators Class 1-B	1/1/2025		\$42.10	\$24.23	\$66.33
Painters Class 1 (see notes)	5/1/2018		\$23.92	\$14.37	\$38.29
Painters Class 2 (see notes)	5/1/2023		\$29.15	\$17.54	\$46.69
Painters Class 3 (see notes)	5/1/2023		\$34.90	\$17.54	\$52.44
Pile Driver Divers (Building, Heavy, Highway)	1/1/2023		\$58.70	\$21.22	\$79.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2024		\$60.95	\$21.97	\$82.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		\$62.82	\$22.72	\$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		\$64.70	\$23.47	\$88.17
Piledrivers	1/1/2023		\$39.13	\$21.22	\$60.35
Piledrivers	1/1/2024		\$40.63	\$21.97	\$62.60
Piledrivers	1/1/2025		\$41.88	\$22.72	\$64.60

**BUREAU OF LABOR LAW COMPLIANCE  
PREVAILING WAGES PROJECT RATES**

<b>Project: 24-01480 - Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
Piledrivers	1/1/2026		\$43.13	\$23.47	\$66.60
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		\$48.43	\$40.28	\$88.71
Truckdriver class 1(see notes)	1/1/2023		\$33.04	\$22.13	\$55.17
Truckdriver class 1(see notes)	1/1/2024		\$34.79	\$22.63	\$57.42
Truckdriver class 1(see notes)	1/1/2025		\$36.29	\$23.13	\$59.42
Truckdriver class 1(see notes)	1/1/2026		\$37.79	\$23.63	\$61.42
Truckdriver class 2 (see notes)	1/1/2023		\$33.50	\$22.43	\$55.93
Truckdriver class 2 (see notes)	1/1/2024		\$35.25	\$22.93	\$58.18
Truckdriver class 2 (see notes)	1/1/2025		\$36.75	\$23.43	\$60.18
Truckdriver class 2 (see notes)	1/1/2026		\$38.25	\$23.93	\$62.18
Truckdriver class 3 (see notes)	1/1/2019		\$29.45	\$19.73	\$49.18





Commonwealth of Pennsylvania  
Public Works Employment Verification Form

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Public Works Employment Verification Office  
Department of General Services  
Bureau of Procurement 6<sup>th</sup> floor, Forum Place 555 Walnut Street  
Harrisburg, PA 17101-1914  
717-346-8115  
ra-gsgseverify.pa.gov

**Instructions:** Complete and return the form to the contracting Public Body prior to the award of the contract.

Business or Organization Name (Employer) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Check One:

- Contractor
- Subcontractor

Contracting Public Body \_\_\_\_\_

Contract/Project No. \_\_\_\_\_

Project Description \_\_\_\_\_

Project Location \_\_\_\_\_

Date enrolled in E-Verify \_\_\_\_\_



As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, \_\_\_\_\_, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

\_\_\_\_\_

Authorized Representative Signature

\_\_\_\_\_

Date of Signature





**BUREAU OF RECREATION AND CONSERVATION**

<b>Title:</b> Americans with Disabilities Act (ADA)		
<b>Issued by:</b> The Bureau of Recreation and Conservation (BRC)	<b>Effective Date:</b> 10/5/2009 <b>Scheduled Review:</b> Annual	<b>Document Number:</b> 2300-006
<b>Reviewed:</b> 10/24/22		<b>Revised:</b> 11/22/2013; 12/05/2018
<b>Approved By:</b> Tom Ford, Bureau Director		<b>Program Area:</b> All

**AUTHORITY**

Act 18 of 1995, Section 306, Community Recreation and Heritage Conservation. The Department shall have the power to administer Federal and State programs for grants and loans to local governments, municipal authorities and nonprofit organizations for community and regional projects involving the planning, acquisition, rehabilitation and development of public park, recreation and conservation areas, facilities and programs.

**SCOPE**

Provides directive for administration of the Community Conservation Partnerships Grant Program.

**PURPOSE**

The Department of Conservation and Natural Resources (DCNR) wants to ensure that universal accessibility is developed for all parks and other recreation facilities. Standards and guidelines for accessibility were first developed in the 1960's and have recently been updated.

**POLICY**

- A. All facilities renovated or developed with DCNR funding must be accessible to persons with disabilities. All site development drawings, plans and specifications funded by DCNR must clearly show that the proposed facilities, use areas and amenities are intended to be accessible to persons with disabilities.
- B. It is the responsibility of the grantee to comply with the Architectural Barriers Act of 1968, Section 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act of 1990 and the 2010 ADA Standards for Accessible Design (2010 Standards). Compliance with these regulations is required. It is strongly recommended that grant applicants and grantees work with a licensed design consultant to ensure that the project is designed and constructed consistent with the pertinent ADA laws, standards and guidelines.
- C. Technical Assistance can be provided by the United States Access Board at [www.access-board.gov](http://www.access-board.gov) or via E-mail: [ta@access-board.gov](mailto:ta@access-board.gov).
- D. The following resources are available to assist you and your design consultant in understanding and meeting the ADA Accessibility Standards and Guidelines:
- E. US Dept. of Justice- 2010 ADA Standards for Accessible Design (2010 Standards) - (Reference Chapter 10: Recreation Facilities)
- F. Accessibility Guidelines for Outdoor Developed Areas
- G. (For Trails) Universal Access Trails and Shared Use Paths

**DISCLAIMER**



The policies and procedures outlined in this guidance document are intended to supplement existing requirements. The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DCNR to give the rules in these policies that weight or deference. This document establishes the framework within which DCNR will exercise its administrative discretion in the future.

**PAGE LENGTH**

2 pages

**EFFECTIVE DATE**

Immediately. This policy is to be reviewed and updated every year.

**EXPIRATION**

This policy remains in effect until revised or rescinded.

Tom Ford, Bureau Director

10/24/22

\_\_\_\_\_  
Name/Title of Bureau or Office Director

\_\_\_\_\_  
Date



## NONDISCRIMINATION/SEXUAL HARASSMENT CLAUSE [Grants]

The Grantee agrees:

1. In the hiring of any employee(s) for the manufacture of supplies, performance of work, or any other activity required under the grant agreement or any subgrant agreement, contract, or subcontract, the Grantee, a subgrantee, a contractor, a subcontractor, or any person acting on behalf of the Grantee shall not discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the *Pennsylvania Human Relations Act* (PHRA) and applicable federal laws, against any citizen of this commonwealth who is qualified and available to perform the work to which the employment relates.
2. The Grantee, any subgrantee, contractor or any subcontractor or any person on their behalf shall not in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, against or intimidate any of its employees.
3. Neither the Grantee nor any subgrantee nor any contractor nor any subcontractor nor any person on their behalf shall in any manner discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, in the provision of services under the grant agreement, subgrant agreement, contract or subcontract.
4. Neither the Grantee nor any subgrantee nor any contractor nor any subcontractor nor any person on their behalf shall in any manner discriminate against employees by reason of participation in or decision to refrain from participating in labor activities protected under the *Public Employee Relations Act*, *Pennsylvania Labor Relations Act* or *National Labor Relations Act*, as applicable and to the extent determined by entities charged with such Acts' enforcement, and shall comply with any provision of law establishing organizations as employees' exclusive representatives.
5. The Grantee, any subgrantee, contractor or any subcontractor shall establish and maintain a written nondiscrimination and sexual harassment policy and shall inform their employees in writing of the policy. The policy must contain a provision that sexual harassment will not be tolerated and employees who practice it will be disciplined. Posting this Nondiscrimination/Sexual Harassment Clause conspicuously in easily-accessible and well-lighted places customarily frequented by employees and at or near where the grant services are performed shall satisfy this requirement for employees with an established work site.
6. The Grantee, any subgrantee, contractor or any subcontractor shall not discriminate by reason of race, gender, creed, color, sexual orientation, gender identity or expression, or in violation of the PHRA and applicable federal laws, against any subgrantee, contractor, subcontractor or supplier who is qualified to perform the work to which the grant relates.
7. The Grantee and each subgrantee, contractor and subcontractor represents that it is presently in compliance with and will maintain compliance with all applicable federal, state, and local laws and regulations relating to nondiscrimination and sexual



harassment. The Grantee and each subgrantee, contractor and subcontractor further represents that it has filed a Standard Form 100 Employer Information Report ("EEO-1") with the U.S. Equal Employment Opportunity Commission ("EEOC") and shall file an annual EEO-1 report with the EEOC as required for employers' subject to *Title VII of the Civil Rights Act of 1964*, as amended, that have 100 or more employees and employers that have federal government contracts or first-tier subcontracts and have 50 or more employees. The Grantee, any subgrantee, any contractor or any subcontractor shall, upon request and within the time periods requested by the Commonwealth, furnish all necessary employment documents and records, including EEO-1 reports, and permit access to their books, records, and accounts by the granting agency and the Bureau of Diversity, Inclusion and Small Business Opportunities for the purpose of ascertaining compliance with the provisions of this Nondiscrimination/Sexual Harassment Clause.

8. The Grantee, any subgrantee, contractor or any subcontractor shall include the provisions of this Nondiscrimination/Sexual Harassment Clause in every subgrant agreement, contract or subcontract so that those provisions applicable to subgrantees, contractors or subcontractors will be binding upon each subgrantee, contractor or subcontractor.
9. The Granter's and each subgrantee's, contractor's and subcontractor's obligations pursuant to these provisions are ongoing from and after the effective date of the grant agreement through the termination date thereof. Accordingly, the Grantee and each subgrantee, contractor and subcontractor shall have an obligation to inform the commonwealth if, at any time during the term of the grant agreement, it becomes aware of any actions or occurrences that would result in violation of these provisions.
10. The commonwealth may cancel or terminate the grant agreement and all money due or to become due under the grant agreement may be forfeited for a violation of the terms and conditions of this Nondiscrimination/Sexual Harassment Clause. In addition, the granting agency may proceed with debarment or suspension and may place the Grantee, subgrantee, contractor, or subcontractor in the Contractor Responsibility File.

Based on Management Directive 215.16 Amended (8/2/18)

# Technical Specifications





## SECTION 01100

### SUMMARY

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Future work.
7. Purchase contracts.
8. Owner-furnished products.
9. Contractor-furnished, Owner-installed products.
10. Access to site.
11. Coordination with occupants.
12. Work restrictions.
13. Specification and drawing conventions.
14. Miscellaneous provisions.

- B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

##### 1.3 PROJECT INFORMATION

- A. Project Identification: Furnace Run Park Welcome Center - Contract No. 22015-D.

1. Project Location: 2244 Lindsay Lot Road, Shippensburg, PA 17257

- B. Owner:

Southampton Township - Franklin County  
705 Municipal Drive  
Shippensburg, PA 17257

1. Owner's Representative:

Randy Brenize

C. Engineer:

David Black Associates, Inc.,  
David J. Black, P.E.  
501 Lincoln Way East  
Chambersburg, PA 17201  
Ph: (717) 267-0202 Fax: (717) 267-3646  
Email: dblack@dba-ae.com

D. Consultants: The Owner and Engineer has retained the following design professionals who have prepared designated portions of the Contract Documents:

Site Construction Consultant

Barton & Loguidice, LLC  
Slate Hill Business Center  
3901 Hartzdale Drive, Suite 101  
Camp Hill, PA 17011-7843  
Ph: 717-737-8326  
Email: info@bartonandloguidice.com

MEP Consultant

Paragon Engineering Services, Inc.  
Attention: Chris Wong  
550 Cleveland Avenue, Suite 204  
Chambersburg, PA 17201  
Ph: 717-977-5731  
Email: cwong@PEServices.org

1.4 WORK COVERED BY CONTRACT DOCUMENTS

The Work of Project is defined by the Contract Documents and consists of the following:

Multiple prime construction contracts to include for the general construction work, plumbing construction work, mechanical construction work and electrical construction work for a one story wood framed structure of approximately 2830 square feet of floor area containing conference/meeting rooms and rest rooms associated with the park. Site work out side the limit of work immediately surrounding the building is being constructed under a separate Bid and Contract with the Township.

1.5 WORK BY OTHER PRIME CONTRACTORS

A. General: Cooperate fully with Owner, Consultants and each Prime Construction Contractors and their subcontractors so work may be carried out smoothly, without interfering with or

delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

- B. Concurrent Work: the General, Mechanical, Electrical and Plumbing Construction Contractor will perform work within the designated limit of work area for the building. The Site Construction Contractor will perform the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract:

Four acres of associated site improvements consisting of underground stormwater management system, grading, paving, utilities, and traffic signal alterations.

C. GENERAL CONSTRUCTION I

1. Contract Architectural Drawings X1.1, A1.1, A1.2, A2.1, A3.1, A4.1, A5.1, A6.1, A5.2 A6.1 and Structural Drawings S1.1, S2.1, S4.1.
2. Coordinate all work with the work details in Mechanical, Electrical and Plumbing drawings.
3. Contract Specifications Division 1 through 12.

D. PLUMBING CONSTRUCTION

1. Contract Mechanical Drawings M0.1 and M0.2 Plumbing related items and Drawings M1.1 and M1.2.
2. Coordinate all related work other prime Contractors.
3. Contract Specification Division 1.
4. Contract Specification Division 2 and 6 as applicable for Plumbing construction work. Plumbing Construction is to include trench excavation and backfill and blocking as required for their respective work.

E. ELECTRICAL CONSTRUCTION

1. Contract Electrical Drawings E0.1, E1.1, E2.1, E3.1
2. Coordinate all related work with other prime Contractors.
3. Contract Specification Division 1.
4. Contract Specification Division 2 and 6 as applicable for Electrical construction work. Electrical Construction is to include trench excavation and backfill, blocking and panel as required for their respective work.

F. MECHANICAL CONSTRUCTION

1. Contract Mechanical Drawings Mo.1 and M0.2 Mechanical related items and Drawing M2.1
2. Coordinate all related work with other prime Contractors.
3. Copy and re- Contract Specification Division 1.
4. Contract Specification Division 2 and 6 as applicable for Mechanical construction work. Mechanical Construction is to include trench excavation and backfill and blocking as required for their respective work.

1.6 ACCESS TO SITE

- A. General: All Contractors shall have full use of work area associated with their respective Project site for construction operations during construction period associated with the building. Contractor's use of Project site is limited only by the work being performed by the respective Prime Construction Contractors as required for the completion of their respective work.. Use of

the remaining portion of the site is controlled by the Site Construction Contractor with whom all Prime Contractors associated with the building shall coordinate their requirements for using portions of the site to perform their work and shall be approved by the Site Construction Contractor with proper coordination to permit orderly progress of the work by all Contractors.

- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  - 1. Limits: Confine construction operations to area designated on drawings.
  - 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, patrons, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

#### 1.7 COORDINATION WITH OWNER OCCUPANCY

- A. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
  - 1. Engineer will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
  - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
  - 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
  - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

#### 1.8 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 Contractor's normal business working hours of Monday through Saturday, unless otherwise indicated.
- C. Retain "Existing Utility Interruptions" Paragraph below for existing utilities. Coordinate with requirements for temporary utilities specified in Division 01 Section "Temporary Facilities and Controls."
- D. 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 Engineer not less than two (2) days in advance of proposed utility interruptions.
  2. Obtain utilities written permission before proceeding with utility interruptions.
- E. 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.
- F. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.
- G. Controlled Substances: Use of tobacco products and other controlled substances within the building is not permitted.
- H. Employee Identification: Provide identification tags for Contractor personnel working on Project site. .

#### 1.9 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
  3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

#### 1.10 MISCELLANEOUS PROVISIONS

- A. All listed references to "Architect" to be replaced by Engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

# Technical Specifications





## SECTION 01310

### PROJECT MANAGEMENT AND COORDINATION

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures.
  - 2. Coordination drawings.
  - 3. Requests for Information (RFIs).
  - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

##### Related Requirements:

- 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
- 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
- 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.
- 4. Division 01 Section "General Commissioning Requirements" for coordinating the Work with Owner's Commissioning Authority.

##### 1.3 DEFINITIONS

- A. RFI: Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

##### 1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.5 GENERAL 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 that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- D. 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. Preparation of the schedule of values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
- E. 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. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

## 1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    - c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    - f. Indicate required installation sequences.
    - g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Engineer indicating proposed

resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
3. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
4. Mechanical and Plumbing Work: Show the following:
  - a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
  - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
5. Electrical Work: Show the following:
  - a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
  - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
  - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
  - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
6. Review: Engineer will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Engineer will so inform Contractor, who shall make changes as directed and resubmit.
7. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Division 01 Section "Submittal Procedures."

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.
  1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Engineer
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for approval of Contractor's means and methods.
    - d. Requests for coordination information already indicated in the Contract Documents.
    - e. Requests for adjustments in the Contract Time or the Contract Sum.
    - f. Requests for interpretation of Engineer's actions on submittals.
    - g. Incomplete RFIs or inaccurately prepared RFIs.
  2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
  3. Engineer'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 Engineer in writing within 3 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly.

1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Engineer.
  4. RFI number including RFIs that were returned without action or withdrawn.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Engineer's response was received.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within 3 days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

## 1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Engineer, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.
1. Conduct the conference to review responsibilities and personnel assignments.
  2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Lines of communications.
    - f. Procedures for processing field decisions and Change Orders.
    - g. Procedures for RFIs.
    - h. Procedures for testing and inspecting.

- i. Procedures for processing Applications for Payment.
  - j. Distribution of the Contract Documents.
  - k. Submittal procedures.
  - l. Preparation of record documents.
  - m. Use of the premises.
  - n. Work restrictions.
  - o. Working hours.
  - p. Owner's occupancy requirements.
  - q. Responsibility for temporary facilities and controls.
  - r. Procedures for moisture and mold control.
  - s. Procedures for disruptions and shutdowns.
  - t. Construction waste management and recycling.
  - u. Parking availability.
  - v. Office, work, and storage areas.
  - w. Equipment deliveries and priorities.
  - x. First aid.
  - y. Security.
  - z. Progress cleaning.
4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer, of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups.
    - i. Possible conflicts.
    - j. Compatibility requirements.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written instructions.
    - n. Warranty requirements.
    - o. Compatibility of materials.
    - p. Acceptability of substrates.
    - q. Temporary facilities and controls.
    - r. Space and access limitations.
    - s. Regulations of authorities having jurisdiction.



- t. Testing and inspecting requirements.
  - u. Installation procedures.
  - v. Coordination with other work.
  - w. Required performance results.
  - x. Protection of adjacent work.
  - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Engineer, but no later than 30 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
  2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.
    - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    - c. 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. Preparation of Contractor's punch list.
    - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    - i. Submittal procedures.
    - j. Coordination of separate contracts.
    - k. Owner's partial occupancy requirements.
    - l. Installation of Owner's furniture, fixtures, and equipment.
    - m. Responsibility for removing temporary facilities and controls.
  4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at biweekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
  2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in

planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      - 1) Review schedule for next period.
    - b. Review present and future needs of each entity present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Resolution of BIM component conflicts.
      - 4) Status of submittals.
      - 5) Deliveries.
      - 6) Off-site fabrication.
      - 7) Access.
      - 8) Site utilization.
      - 9) Temporary facilities and controls.
      - 10) Progress cleaning.
      - 11) Quality and work standards.
      - 12) Status of correction of deficient items.
      - 13) Field observations.
      - 14) Status of RFIs.
      - 15) Status of proposal requests.
      - 16) Pending changes.
      - 17) Status of Change Orders.
      - 18) Pending claims and disputes.
      - 19) Documentation of information for payment requests.
  4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
    - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- F. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in

planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
  - b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
  - c. Review present and future needs of each contractor present, including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.
    - 3) Resolution of BIM component conflicts.
    - 4) Status of submittals.
    - 5) Deliveries.
    - 6) Off-site fabrication.
    - 7) Access.
    - 8) Site utilization.
    - 9) Temporary facilities and controls.
    - 10) Work hours.
    - 11) Hazards and risks.
    - 12) Progress cleaning.
    - 13) Quality and work standards.
    - 14) Change Orders.
3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## SECTION 01330

### SUBMITTAL PROCEDURES

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
  - 1. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
  - 2. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 4. Division 01 Section "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

##### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. 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.

##### 1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing,

fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Engineer's final release or approval.
  - g. Scheduled date of fabrication.
  - h. Scheduled dates for purchasing.
  - i. Scheduled dates for installation.
  - j. Activity or event number.

## 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Engineer for Contractor's use in preparing submittals.
  1. Engineer will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
    - a. Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD.
    - c. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
    - d. The following digital data files will be furnished for each appropriate discipline:
      - 1) Floor plans.
      - 2) Reflected ceiling plans.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of 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. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Engineer's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
  5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Engineer and to Engineer's consultants, allow 15 days for review of each submittal. Submittal will be returned to Engineer before being returned to Contractor.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
  4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
    - a. Project name.

- b. Date.
  - c. Name and address of Engineer.
  - d. Name of Construction Manager.
  - e. Name of Contractor.
  - f. Name of firm or entity that prepared submittal.
  - g. Names of subcontractor, manufacturer, and supplier.
  - h. Category and type of submittal.
  - i. Submittal purpose and description.
  - j. Specification Section number and title.
  - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
  - l. Drawing number and detail references, as appropriate.
  - m. Location(s) where product is to be installed, as appropriate.
  - n. Related physical samples submitted directly.
  - o. Indication of full or partial submittal.
  - p. Transmittal number, numbered consecutively.
  - q. Submittal and transmittal distribution record.
  - r. Other necessary identification.
  - s. Remarks.
5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
- a. Project name.
  - b. Number and title of appropriate Specification Section.
  - c. Manufacturer name.
  - d. Product name.
- E. Options: Identify options requiring selection by Engineer.
- F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Submit electronic submittals via email as PDF electronic files.
    - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  2. Action Submittals: Submit four paper copies of each submittal unless otherwise indicated. Engineer will return two copies.
  3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Engineer will not return copies.
  4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.



- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
    5. Submit Product Data before or concurrent with Samples.
    6. Submit Product Data in the following format:
      - a. PDF electronic file.
  - C. 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 Engineer's digital data drawing files is otherwise permitted.
    1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      - a. Identification of products.
      - b. Schedules.
      - c. Compliance with specified standards.
      - d. Notation of coordination requirements.
      - e. Notation of dimensions established by field measurement.
      - f. Relationship and attachment to adjoining construction clearly indicated.
      - g. Seal and signature of professional engineer if specified.
    2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 24 by 36 inches.
    3. Submit Shop Drawings in the following format:
      - a. PDF electronic file.
  - D. 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.
      - e. Specification paragraph number and generic name of each item.
    3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
    4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

- a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
  - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- 5. 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 one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.
- 6. 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 three sets of Samples. Engineer will retain two Sample sets; remainder will be returned.
    - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
    - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- 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.
  - 4. Location within room or space.
  - 5. Submit product schedule in the following format:
    - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

- H. Application for Payment and Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- L. 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 Engineers and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. 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.
- O. 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.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. 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.
- S. 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.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.

4. Product and manufacturers' names.
  5. Description of product.
  6. Test procedures and results.
  7. Limitations of use.
- U. 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.
- V. 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.
- W. 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.
- X. 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.

## 2.2 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 Engineer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### 3.2 ENGINEER'S ACTION

- A. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Engineer without action.
- F. Engineers cost to submittals requiring more than two submissions will be charged to the contractor as a change order based on time utilized at standard hourly rates.

END OF SECTION 013300

## SECTION 01400

### QUALITY REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and 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 Engineer, Owner or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Requirements:
  - 1. Divisions 02 through 16 Sections for specific test and inspection requirements.

##### 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.
- C. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. 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.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- I. 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 Engineer 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 Engineer for a decision before proceeding.

#### 1.5 ACTION SUBMITTALS

- A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
  - 1. Indicate manufacturer and model number of individual components.
  - 2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data : For Contractor's quality-control personnel.
- C. 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.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.

## 1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 14 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
  - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."



3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

## 1.8 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  1. Date of issue.
  2. Project title and number.
  3. Name, address, and telephone number of testing agency.
  4. Dates and locations of samples and tests or inspections.
  5. Names of individuals making tests and inspections.
  6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
  1. Name, address, and telephone number of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.

- C. **Factory-Authorized Service Representative's Reports:** Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
  - 1. Name, address, and telephone number of factory-authorized service representative making report.
  - 2. Statement that equipment complies with requirements.
  - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - 4. Statement whether conditions, products, and installation will affect warranty.
  - 5. Other required items indicated in individual Specification Sections.
  
- D. **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.

## 1.9 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 products that are similar in material, design, and extent to those indicated for this Project.
  
- F. **Specialists:** Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
  
- G. **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.
- H. **Manufacturer's Technical Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. **Contractor responsibilities include the following:**
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
  2. **Testing Agency Responsibilities:** Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

#### 1.10 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. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
  3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities 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 48 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 Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer 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. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and 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 as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

#### 1.11 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, as indicated in Statement of Special Inspections included in the document, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.

2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

## 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 Engineer.
  4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in 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 014000



## SECTION 01500

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

##### 1.3 USE CHARGES

- A. General Construction Contractor: Installation and removal of and use charges for temporary sanitary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner, other Prime Construction Contractors, subcontractors construction forces, Engineer, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.

##### 1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.



- C. Fire-Safety Program: All Prime Construction Contractors shall show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture-Protection Plan: Each respective Prime Construction Contractor shall Describe procedures and controls for protecting materials and construction from water absorption and damage.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
  - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- E. Site Dust Plan: by Site Construction Contractor.

## 1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in ICC/ANSI A117.1.

## 1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- B. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).
- C. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

## 2.2 TEMPORARY FACILITIES

- A. Storage and trailer: Provide trailer 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: Each Prime Construction Contractor shall provide portable, UL rated; with class and extinguishing agent as required by locations, and classes of fire exposures associated with their respective work.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Locate Sanitary facilities where designated by Site Construction Contractor and 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.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Electrical Construction Contractor shall coordinate securing electrical service with local utility company.
  - 1. Arrange with utility company and Owner time when service can be interrupted, if necessary, to make connections for service.
- B. Water Service: Site Construction Contractor to provide water service. Plumbing Construction Contractor to connect to service line to building. Clean and maintain water service facilities in an acceptable condition.
- C. Sanitary Facilities: General Construction Contractor to provide two temporary toilets with wash facilities for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Each respective Construction Contractor to provide drinking water for their construction personnel.
- D. Heating and Cooling: Each respective Prime Construction Contractor to provide temporary heating and cooling as required by their 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. Ventilation and Humidity Control: Each respective Prime Construction Contractor to provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
  - 1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- F. Electric Power Service: Each Prime Construction Contractor to provide temporary electric power service and distribution system of sufficient size, capacity, and power characteristics required for their construction operations.
  - 1. Connect temporary service to municipal's existing power source, as directed by Owner or provide temporary on site power source.
- G. Lighting: Electric Construction Contractor to provide temporary lighting with local switching when service is installed and building is suitable and provide adequate illumination for construction operations, observations, and inspections.
  - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- H. Telephone Service: All Prime Construction Contractors shall provide telephone cell service.
  - 1. Provide superintendent with cellular telephone.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Maintain support facilities until Engineer schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: By Site Construction Contractor. All Prime Construction Contractors shall follow requirements for use of temporary roads established by Site Construction Contractor. Cost to repair any damage resulting from any of the Prime Construction Contractor's personnel's inappropriate usage are to be paid by that respective Prime Contractor. Otherwise cost will be paid by Owner and the amount deducted from that respective Prime Contract.
  - 1. Site Construction Contractor to provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Permanent Roads and Paved Areas: As permitted and directed by the Site Construction Contractor and Owner.
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Site Construction Contractor to Provide temporary parking areas for construction personnel.
- F. Project Signs: Unauthorized signs are not permitted.
- G. Waste Disposal Facilities: Each respective Prime Construction Contractor to provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Division 01 Section "Execution."
- H. Lifts and Hoists: Each respective Prime Construction Contractor to provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

#### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: All Prime Construction Contractors shall 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.
- B. Environmental Protection: Each respective Prime Construction Contractor to provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: By Site Construction Contractor. Insert local regulations for environmental protection. Specify restrictions on noisemaking activities in Division 01 Section "Summary."
- D. Stormwater Control: By Site Construction Contractor. Retain one of two "Tree and Plant Protection" paragraphs below. Delete "Pest Control" Paragraph below only if cost considerations are paramount. Revise if specific pests, such as termites or pigeons, are a known problem.
- E. Security Enclosure and Lockup: General Construction Contractor shall Install temporary 6' chain link fence enclosure around construction work area. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

- G. Temporary Enclosures: General Construction Contractor to provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
  
- H. Temporary Partitions: Each Prime Construction Contractor to provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate completed areas from fumes and noise as required for their respective work.
  - 1. Construct dustproof partitions with two layers of 6-mil (0.14-mm) polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
  - 2. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
  - 3. Protect air-handling equipment.
  - 4. Provide walk-off mats at each entrance through temporary partition.
  
- I. Temporary Fire Protection: General Construction Contractor to provide 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 in construction areas.
  - 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.

### 3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Provided by each Prime Construction Contractor to avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
  
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, 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.

- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, 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, replace, or clean stored or installed material that begins to grow mold.
  7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  2. Use permanent HVAC system to control humidity.
  3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
    - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Engineer.
    - c. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

### 3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Each Respective Prime Construction Contractor to enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

END OF SECTION 015000



## SECTION 01600

### PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

##### 1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. 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 of additional manufacturers named in the specification.

##### 1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product 7 days prior to bid submission. 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. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Engineer will notify Contractor of approval or rejection of proposed comparable product request within 3 days of receipt of request, or 3 days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    - b. Use product specified only if Engineer issues a decision on use of a comparable product request.
- 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, Engineer will determine which products shall be used.

## 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
  2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. 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.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
  3. See Divisions 02 through 33 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," Engineer 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. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
  - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
  - b. Nonrestricted List: 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.
4. Manufacturers:
  - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
  - b. Nonrestricted List: 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.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Matching Specification: Where Specifications require "match Engineer's sample", provide a product that complies with requirements and matches Engineer's sample. Engineer'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 Engineer from manufacturer's full range" or similar phrase, select a product that complies with requirements. Engineer 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: Engineer will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer 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 Engineers and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000



## SECTION 01730

### EXECUTION

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. Installation of the Work.
  - 4. Cutting and patching.
  - 5. Coordination of Owner-installed products.
  - 6. Progress cleaning.
  - 7. Starting and adjusting.
  - 8. Protection of installed construction.
  - 9. Correction of the Work.
- B. Related Requirements:
  - 1. Division 01 Section "Summary" for limits on use of Project site.
  - 2. Division 01 Section "Submittal Procedures" for submitting surveys.
  - 3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
  - 4. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

##### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

##### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For land surveyor.

- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
  - 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
  - 3. Products: List products to be used for patching and firms or entities that will perform patching work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
    - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- E. Certified Surveys: Submit two copies signed by land surveyor.
- F. Final Property Survey: Submit three copies showing the Work performed and record survey data and one copy of data file in AutoCAD format.

## 1.5 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. 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, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
  - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.
    - c. Air or smoke barriers.
    - d. Fire-suppression systems.

- e. Mechanical systems piping and ducts.
  - f. Control systems.
  - g. Communication systems.
  - h. Fire-detection and -alarm systems.
  - i. Conveying systems.
  - j. Electrical wiring systems.
  - k. Operating systems of special construction.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- a. Water, moisture, or vapor barriers.
  - b. Membranes and flashings.
  - c. Exterior curtain-wall construction.
  - d. Sprayed fire-resistive material.
  - e. Equipment supports.
  - f. Piping, ductwork, vessels, and equipment.
  - g. Noise- and vibration-control elements and systems.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.
- 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 Engineer 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, and other construction affecting the Work. Contact Pennsylvania "One Call."
  - 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. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
  - 1. Description of the Work.
  - 2. List of detrimental conditions, including substrates.
  - 3. List of unacceptable installation tolerances.
  - 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to 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 Engineer according to requirements in Division 01 Section "Project Management and Coordination."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish limits on use of Project site.
  - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 4. Inform installers of lines and levels to which they must comply.
  - 5. Check the location, level and plumb, of every major element as the Work progresses.
  - 6. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
  - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

### 3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points

- promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

### 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure 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. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to 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. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Division 31 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. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.7 OWNER-PROVIDED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's personnel.
- B. Coordination: Coordinate construction and operations of the Work with equipment provided by Owner.
  1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

### 3.8 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 (27 deg C).
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

- J. Limiting Exposures: Supervise construction operations to 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.

### 3.9 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.
- E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

### 3.10 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.

END OF SECTION 017300

## SECTION 01770

### CLOSEOUT PROCEDURES

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.
- B. Related Requirements:
  - 1. Division 01 Section "Execution" for progress cleaning of Project site.
  - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 4. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 5. Divisions 02 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

##### 1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

##### 1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.



- C. Field Report: For pest control inspection.

## 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

## 1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Divisions 02 through 33 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Divisions 02 through 33 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number where applicable.

- a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer's signature for receipt of submittals.

5. Submit test/adjust/balance records.
6. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  3. Complete startup and testing of systems and equipment.
  4. Perform preventive maintenance on equipment used prior to Substantial Completion.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
  6. Advise Owner of changeover in heat and other utilities.
  7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  9. Complete final cleaning requirements, including touchup painting.
  10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

#### 1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
  2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

## 1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  1. Organize list of spaces in sequential order.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Page number.
  4. Submit list of incomplete items in the following format:
    - a. MS Excel electronic file. Engineer will return annotated file.

## 1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
  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 (215-by-280-mm) 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. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling

navigation to each item. Provide bookmarked table of contents at beginning of document.

- 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.
  - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

## 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 requesting 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. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - h. Sweep concrete floors broom clean in unoccupied spaces.
  - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
  - j. 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.
  - k. Remove labels that are not permanent.
  - l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
  - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
  - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Division 01 Section "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

### 3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.

- a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700



## SECTION 01782

### OPERATION AND MAINTENANCE DATA

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Product maintenance manuals.
5. Systems and equipment maintenance manuals.

- B. Related Requirements:

1. Division 01 Section "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
2. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
3. Division 01 Section "General Commissioning Requirements" for verification and compilation of data into operation and maintenance manuals.
4. Divisions 02 through 16 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

##### 1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

##### 1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.



1. Engineer will comment on whether content of operations and maintenance submittals are acceptable.
  2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Engineer.
    - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
    - b. Enable inserted reviewer comments on draft submittals.
- C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Engineer will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Engineer will return copy with comments.
1. Correct or revise each manual to comply with Engineer's comments. Submit copies of each corrected manual within 15 days of receipt of Engineer's comments and prior to commencing demonstration and training.

## PART 2 - PRODUCTS

### 2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
1. List of documents.
  2. List of systems.
  3. List of equipment.
  4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

## 2.2 REQUIREMENTS FOR EMERGENCY, 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.
  - 2. Table of contents.
  - 3. Manual contents.
- B. Title Page: Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Name and address of Owner.
  - 4. Date of submittal.
  - 5. Name and contact information for Contractor.
  - 6. Name and contact information for Construction Manager.
  - 7. Name and contact information for Engineer.
  - 8. Name and contact information for Commissioning Authority.
  - 9. Names and contact information for major consultants to the Engineer that designed the systems contained in the manuals.
  - 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
  - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. 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: Enable bookmarking of 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.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
  - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
  - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
  - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

## 2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. System, subsystem, or equipment failure.

- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
  - 1. Instructions on stopping.
  - 2. Shutdown instructions for each type of emergency.
  - 3. Operating instructions for conditions outside normal operating limits.
  - 4. Required sequences for electric or electronic systems.
  - 5. Special operating instructions and procedures.

## 2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
  - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  - 2. Performance and design criteria if Contractor has delegated design responsibility.
  - 3. Operating standards.
  - 4. Operating procedures.
  - 5. Operating logs.
  - 6. Wiring diagrams.
  - 7. Control diagrams.
  - 8. Piped system diagrams.
  - 9. Precautions against improper use.
  - 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
  - 1. Product name and model number. Use designations for products indicated on Contract Documents.
  - 2. Manufacturer's name.
  - 3. Equipment identification with serial number of each component.
  - 4. Equipment function.
  - 5. Operating characteristics.
  - 6. Limiting conditions.
  - 7. Performance curves.
  - 8. Engineering data and tests.
  - 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
  - 1. Startup procedures.
  - 2. Equipment or system break-in procedures.
  - 3. Routine and normal operating instructions.
  - 4. Regulation and control procedures.
  - 5. Instructions on stopping.
  - 6. Normal shutdown instructions.

7. Seasonal and weekend operating instructions.
  8. Required sequences for electric or electronic systems.
  9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

## 2.5 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. 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.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
  2. Manufacturer's name.
  3. Color, pattern, and texture.
  4. Material and chemical composition.
  5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
  2. Types of cleaning agents to be used and methods of cleaning.
  3. List of cleaning agents and methods of cleaning detrimental to product.
  4. Schedule for routine cleaning and maintenance.
  5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

## 2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures,

maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
  - 1. Standard maintenance instructions and bulletins.
  - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  - 3. Identification and nomenclature of parts and components.
  - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
  - 1. Test and inspection instructions.
  - 2. Troubleshooting guide.
  - 3. Precautions against improper maintenance.
  - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - 5. Aligning, adjusting, and checking instructions.
  - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
  - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. 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.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

## PART 3 - EXECUTION

### 3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. 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.
  - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. 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.
- F. 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.
  - 2. Comply with requirements of newly prepared record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

## SECTION 01783

### PROJECT RECORD DOCUMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Miscellaneous record submittals.
- B. Related Requirements:
  - 1. Division 01 Section "Execution" for final property survey.
  - 2. Division 01 Section "Closeout Procedures" for general closeout procedures.
  - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 4. Divisions 02 through 16 Sections for specific requirements for project record documents of the Work in those Sections.

##### 1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one paper-copy set(s) of marked-up record prints.
      - 2) Submit PDF electronic files of scanned record prints and one of file prints.
      - 3) Submit record digital data files and one set(s) of plots.
      - 4) Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:



- 1) Submit one paper-copy set(s) of marked-up record prints.
  - 2) Submit record digital data files and three set(s) of record digital data file plots.
  - 3) Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one paper copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy of each submittal.
1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.
- E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

## PART 2 - PRODUCTS

### 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an acceptable drawing technique.
    - c. Record data as soon as possible after obtaining it.
    - d. Record and check the markup before enclosing concealed installations.
    - e. Cross-reference record prints to corresponding archive photographic documentation.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.

- f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by Change Order or Construction Change Directive.
  - k. Changes made following Engineer's written orders.
  - l. Details not on the original Contract Drawings.
  - m. Field records for variable and concealed conditions.
  - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

## 2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
  3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
  5. Note related Change Orders and record Drawings where applicable.
- B. Format: Submit record Specifications as paper copy.

## 2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
  1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
  3. Note related Change Orders, record Specifications, and record Drawings where applicable.

- B. Format: Submit record Product Data as paper copy.
  - 1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

#### 2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as paper copy.
  - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

### PART 3 - EXECUTION

#### 3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples 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 Engineer's reference during normal working hours.

END OF SECTION 017839

## SECTION 02202

### ROCK REMOVAL

#### 1. PART 1 GENERAL

##### 1..1 SECTION INCLUDES

- A. Removal of discovered rock during excavation.
- B. Expansive tools and explosives to assist rock removal.

##### 1..2 RELATED SECTIONS

- A. Section 02211 - Rough Grading.
- B. Section 02222 - Excavation: Building excavation.
- C. Section 02223 - Backfilling: Backfill materials.

##### 1..3 UNIT PRICES

- A. Rock Quantity: Assumed quantity of rock is as Follows:
  - 1. Rock Excavation (Footings): Ten (10) cubic yards.
  - 2. Rock Excavation (Trenches): Five (5) cubic yards.
- B. Adjustments in Contract Price will be made due to changes in quantity of rock, based on unit prices established in the Agreement for rock removal.
- C. Determination of Unit Measurements: Identified by site measurements and verified by the Engineer. Measurement to be based on minimum dimensions required to provide specified clearances.

##### 1..4 DEFINITIONS

- A. Site Rock: Rock in open cut areas should be defined as material which cannot be excavated with the ripper of a Caterpillar D-8 Series Dozer or equivalent or any boulder or rock in excess of one and one-half (1½) cubic yards in volume.
- B. Trench Rock: Rock in footing trenches or excavations should be defined as material which cannot be removed with a Caterpillar E240 E240 Series Excavator (trackhoe), or equivalent, with a minimum stick force of 18,740 lbs. and a minimum bucket force of 28,660 lbs. or defined as any rock or boulder in excess of one-half (½) cubic yard.

##### 1..5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate intended method for removing rock.

#### 1..6 SCHEDULING

- A. Schedule work under the provisions of Section 01300.
- B. Schedule Work to avoid disruption to occupied buildings nearby.

### 2. PART 2 PRODUCTS

### 3. PART 3 EXECUTION

#### 3..1 EXAMINATION

- A. Verify site conditions and note subsurface irregularities affecting work of this Section.

#### 3..2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Conduct survey and document conditions of buildings near locations of rock removal photograph existing conditions identifying existing irregularities.

#### 3..3 ROCK REMOVAL - MECHANICAL METHOD

- A. Excavate and remove rock by the mechanical method. Drill holes and utilize expansive tools and wedges to fracture rock.
- B. Cut away rock to 12" below bottom of footing excavation to form level bearing and 6" minimum clear of side of footings.
- C. Remove shaled layers to provide sound and unshattered base for footings.
- D. In utility trenches, excavate to 12 inches below invert elevation of pipe and 24 inches wider than pipe diameter.
- E. Remove excavated materials from site.
- F. Correct unauthorized rock removal in accordance with backfilling and compaction requirements of Section 02223 or lean concrete fill in accordance with Section 03300.

#### 3..4 ROCK REMOVAL - EXPLOSIVE METHOD

- A. Special permission by Owner and Chambersburg Borough.

#### 3..5 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01400.

- B. Provide for visual inspection of foundation bearing surfaces and cavities formed by removed rock.

END OF SECTION



## SECTION 02207

### AGGREGATE MATERIALS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Aggregate materials.

##### 1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control.
- B. Section 02222 - Backfilling.
- C. Section 02721 - Storm Drainage Systems.

##### 1.3 REFERENCES

- A. AASHTO - M147 - Materials for Aggregate and Soil-Aggregate.
- B. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-in. (457 mm) Drop.
- C. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- D. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- E. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- F. ASTM D2167 - Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- G. ASTM D2487 - Classification of Soils for Engineering Purposes.
- H. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- I. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
- J. ASTM D4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.



- B. Samples: Submit, in air-tight containers, 10 lb. sample of each type of fill to testing laboratory.
- C. Materials Source: Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires Engineer approval.

## PART 2 PRODUCTS

### 2.1 AGGREGATE MATERIALS

- A. Aggregates: Conforming to Pennsylvania Department of Transportation Specifications Form 408.

## PART 3 EXECUTION

### 3.1 STOCKPILING

- A. Stockpile in sufficient quantities to meet project schedule and requirements.
- B. Separate differing materials with dividers or stockpile apart to prevent mixing.
- C. Direct surface water away from stockpile site so as to prevent erosion or deterioration of materials.

### 3.2 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in a clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

## SECTION 02218

### LANDSCAPE GRADING

#### PART 1 - GENERAL

##### 1.1 WORK INCLUDED

- A. Finish grade subsoil and proof roll
- B. Place, level, and compact topsoil.

##### 1.2 RELATED WORK

- A. Section 01400 - Quality Control.
- B. Section 02211 - Rough Grading: Subsoil contouring.
- C. Section 02223 - Backfilling: Backfilling and compacting fill.

##### 1.3 PROTECTION

- A. Protect landscaping and other features remaining as final work.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. Topsoil: Reused on-site material and imported from off-site; friable loam; free of subsoil; roots, grass, weeds, stone, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter.

#### PART 3 - EXECUTION

##### 3.1 INSPECTION

- A. Verify site conditions and note irregularities affecting work of this Section.
- B. Beginning work of this Section means acceptance of existing conditions.

##### 3.2 SUBSOIL PREPARATION

- A. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove subsoil contaminated with petroleum products.
- B. Scarify subgrade to depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

### 3.3 PLACING TOPSOIL

- A. Place topsoil to a compacted depth of 8 inches, in areas where seeding is scheduled and 18 inches below root ball where planting is scheduled.
- B. Use topsoil in relatively dry state. Place during dry weather.
- C. Fine grade topsoil eliminating rough or low areas. Maintain levels, profiles, and contours of subgrade.
- D. Remove stone, roots, grass, weeds, debris, and foreign material while spreading.
- E. Manually spread topsoil around trees, plants, and building to prevent damage.
- F. Roll placed topsoil.
- G. Remove surplus subsoil and topsoil from site.
- H. Leave stockpile area and site clean and raked, ready to receive landscaping.

### 3.4 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch.

END OF SECTION

## SECTION 02222

### EXCAVATION

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Excavation for building foundations.
- B. Excavation for slabs-on-grade.

##### 1.2 RELATED SECTIONS

- A. Bid Document: Unit prices for special excavation work.
- B. Section 01400 - Quality Control: Inspection of bearing surfaces.
- C. Section 01500 - Construction Facilities and Temporary Controls: Dewatering excavation and water control.
- D. Section 02202 - Rock removal: Removal of Rock during excavation.
- E. Section 02211 - Rough Grading.
- F. Section 02218 - Landscape Grading.
- G. Section 02223 - Backfilling.

##### 1.3 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the Work are as indicated.

#### PART 2 - PRODUCTS

- 2.1 Not Used.

#### PART 3 - EXECUTION

##### 3.1 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.
- C. Notify utility company to remove and relocate utilities where noted.
- D. Protect above and below grade utilities which are to remain.

- E. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.
- F. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.

### 3.2 EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work, including utilities and pipe chases.
- B. Excavate subsoil required to accommodate building foundations, slabs-on-grade, paving, site structures, and construction operations.
- C. Excavate to working elevations.
- A. Over-excavate to remove unsuitable soil as required by Engineer or designated consultant.
- E. Excavation cut not to interfere with normal 45 degree bearing splay of foundation.
- F. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- G. Hand trim excavation. Remove loose matter. Compact excavation surface.
- H. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. Larger material will be removed under Section 02202.
- I. Notify Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- J. Correct unauthorized excavation at no extra cost to Owner.
- K. Correct areas over-excavated by error at direction of Owner by enlarging footings or installing properly placed backfill at no extra cost to Owner.
- L. Stockpile excavated material in area designated on site and remove excess material not being reused, from site.
- M. Backfill over-excavated areas with Type A granular fill and compact in accordance with Section 02223.

### 3.3 FIELD QUALITY CONTROL

- A. Field testing will be performed under provisions of Section 01400 by Contractor.
- B. Provide for visual inspection of bearing surfaces.
- C. Dewater excavation as required to provide suitable dry surface for subsequent

construction.

### 3.4 PROTECTION

- A. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation, from freezing.

END OF SECTION



## SECTION 02223

### BACKFILLING

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Building perimeter and site structure backfilling to subgrade elevations.
- B. Site filling and backfilling.
- C. Granular stone base under slabs-on-grade.
- D. Consolidation and compaction.
- E. Fill for over-excavation.

##### 1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control.
- B. Section 01410 - Testing Laboratory Services: Testing Fill compaction.
- C. Section 02218 - Landscape Grading: Filling of topsoil to finish grade elevation.
- D. Section 02222 - Excavation.
- E. Section 03300 - Cast-in-Place Concrete: Concrete materials.

##### 1.3 REFERENCES

- A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb Rammer and 12 inch Drop.
- C. ANSI/ASTM D2922 - Test Methods for Density Soil and Soil-Aggregate in place by Nuclear Methods (Shallow Depth).
- D. ANSI/ASTM D3017 - Test Method for Water Content of Soil and Rock in place by Nuclear Methods (Shallow Depth).
- E. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18 inch Drop.

##### 1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.



- B. Samples: Submit 10 lb. sample of each type of fill to testing laboratory, in air-tight containers.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

- A. Type A & B - Coarse Crushed Stone: Pit run, Angular, washed natural stone; free of shale, clay, friable material, sand, debris; graded in accordance with ANSI/ASTM C136 within the following limits:

<u>Sieve Size</u>	<u>Type A Percent Passing</u>	<u>Type B Percent Passing</u>
2 inches	100	---
1½ inches	---	100
One inch	---	95 to 100
¾ inch	52 to 100	---
½ inch	---	25 to 60
⅜ inch	36 to 70	---
No. 4	24 to 50	0 to 10
No. 8	---	0 to 5
No. 16	10 to 30	---
No. 200	0 to 10	---

- B. Type C - Stone Gravel: Natural stone; washed, free of clay, shale, organic matter; graded in accordance with ANSI/ASTM C136, to the following:

1. Minimum Size: ¼ inch.
2. Maximum Size: 5/8 inch.

- C. Type D - Sand: Natural river or bank sand; washed: free of silt, clay, loam, friable or soluble materials, or organic matter; graded in accordance with ANSI/ASTM C136, within the following limits:

<u>Sieve Size</u>	<u>Percent Passing</u>
No. 4	100
No. 14	10 to 100
No. 50	5 to 90
No. 100	4 to 30
No. 200	0

- D. Subsoil: Reusable on-site material and off-site imported, free of gravel larger than 3 inch size, and debris.
- E. Type F - Structural Fill: Type A Stone.
- F. Concrete: Structural concrete conforming to Section 03300 with a compressive strength of 2,000 psi.

## 2.2 ACCESSORIES

- A. Geotextile Fabric
- B. Vapor Retardant: 10 Mil thick, polyethylene.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify fill materials to be reused are acceptable.
- B. Verify foundation perimeter drainage installation has been inspected.

### 3.2 PREPARATION

- A. Generally, compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of insitu compaction. Backfill with Type A or subsoil fill and compact to density equal to or greater than requirements for subsequent backfill material.
- C. Prior to placement of aggregate base course material at gravel paved areas, compact subsoil to 100 percent of its maximum dry density and at moisture within three (3) percentage points of the material's optimum moisture content in accordance with ANSI/ASTM D698.

### 3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Granular Fill: Place and compact materials in continuous layers not exceeding 8 inches compacted depth.
- D. Soil Fill: Place and compact material in continuous layers not exceeding 8 inches compacted depth.
- E. Maintain optimum moisture content of backfill materials to attain required compaction density.
- F. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.
- G. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.

- H. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise.
- I. Make grade changes gradual. Blend slope into level areas.
- J. Remove surplus backfill materials from site.
- K. Leave fill material stockpile areas completely free of excess fill materials.

### 3.4 TOLERANCES

- A. Top Surface of Backfilling: Plus 0.5 inch or minus one inch from required elevations.

### 3.5 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed by Contractor under provisions of Section 01410.
- B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM D698.
- C. Compaction testing will be performed in accordance with ANSI/ASTM D2922 AND D3017.
- D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.
- E. Frequency of Tests: as required.
- F. Proof roll compacted fill surfaces under slabs-on-grade, paving and sidewalk areas.

### 3.6 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Re-compact fills subjected to vehicular traffic.

### 3.7 SCHEDULE

- A. Interior Crawl Spaces:
  - 1. Subsoil or Type A fill, 8 minimum inches thick each lift as required, compacted to 100 percent.
  - 2. Cover with Type B fill, 6 inches thick, compacted to 95 percent.
- B. Interior Slab-On-Grade:
  - 1. Subsoil or Type A fill, 8 minimum inches thick each lift as required, compacted to 100 percent.
  - 2. Cover with Type B fill, 6 inches thick, compacted to 95 percent.
- C. Exterior Side of Foundation Walls and Over Granular Filter Material and Foundation

Perimeter Drainage:

1. Subsoil or Type A fill to subgrade elevation, 8 inch thick each lift as required, compacted to 95%.
- D. Fill Under Grass Areas:
1. Subsoil fill to within 8 inches below finish grade, compacted to 90 percent.
- E. Fill Under Landscaped Areas:
1. Subsoil fill to within 3'-0" inches below compacted to 90 percent.
- F. Fill for French Drains:
1. Type B fill to encase pipe, compacted to 90 percent.
- G. Fill to Correct Over-excavation:
1. Lean concrete to minimum compressive strength of 2,000 psi.
  2. Type A structural fill, flush to required elevation, compacted to 100 percent.
- H. Fill Over Drainage Piping Gravel Cover:
1. Subsoil or Type A fill, to finish subgrade, compacted to 95%.
- I. Moisture Condition:
1. Moisture condition all fill and backfill materials to within three (3) percentage points of the respective material's optimum moisture content as determined by the ASTM D698 Test Method.

END OF SECTION



## SECTION 02225

### TRENCHING

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Excavate trenches for utilities from outside building to municipal utilities.
- B. Compacted bedding under fill over utilities.
- C. Backfilling and compaction.

##### 1.2 RELATED SECTIONS

- A. Section 01400- Quality Control: Testing fill compaction.
- B. Section 02222 - Excavation: General building excavation.
- C. Section 02710 - Subdrainage Systems: Building perimeter tile drainage.
- D. Section 02732: Sewer piping from building to municipal sewer.
- E. Section 02721: Storm drainage from building to municipal storm water system.
- F. Section 03300 - Cast-in-Place Concrete: Concrete materials.

##### 1.3 REFERENCES

- A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 kg) Rammer and 12 inch (304.8 mm) Drop.
- C. ANSI/ASTM D2922 - Test Methods for Density Soil and Soil-Aggregate in place by Nuclear Methods (Shallow Depth).
- D. ANSI/ASTM D3017 - Test Method for Water Content of Soil and Rock in place by Nuclear Methods (Shallow Depth).
- E. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18 inch Drop

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.

B. Samples: Submit 40 lb sample of each type of fill to testing laboratory.

#### 1.5 FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the Work are as shown on Drawings.

### 2. PART 2 PRODUCTS

#### 2.1 FILL MATERIALS

A. Types Subsoil as specified in Section 02223.

#### 2.2 BED MATERIALS

A. Type 1 Material: Fine Crushed Stone Aggregate.

### 3. PART 3 EXECUTION

#### 3.1 EXAMINATION

A. Verify fill materials to be reused, are acceptable.

#### 3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Maintain and protect existing utilities remaining, which pass through work area.
- C. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- D. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.
- E. Protect above and below grade utilities which are to remain.
- F. Cut out soft areas of subgrade not capable of insitu compaction. Backfill and compact to density equal to or greater than requirements for subsequent backfill material.

#### 3.3 EXCAVATION

- A. Excavate subsoil required for storms sewer, sanitary sewer and water piping to municipal utilities.
- B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection.
- C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.

- D. Hand trim excavation. Remove loose matter.
- E. Remove lumped subsoil, boulders, and rock.
- F. Correct unauthorized excavation at no cost to Owner.
- G. Correct areas over-excavated by error.
- H. Stockpile excavated material and remove excess material not being used, from site.

#### 3.4 BEDDING

- A. Support pipe and conduit during placement and compaction of bedding fill.

#### 3.5 BACKFILLING

- A. Backfill trenches to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Granular Fill: Place and compact materials in continuous layers not exceeding 6 inches compacted depth.
- D. Soil Fill: Place and compact material in continuous layers not exceeding 8 inches compacted depth.
- E. Employ a placement method that does not disturb or damage foundation perimeter drainage and conduit in trench.
- F. Maintain moisture content of backfill materials within three (3) percentage points of the material's optimum moisture content as determined by the ASTM D698 test procedure to attain required compaction density.
- G. Remove surplus backfill materials from site.
- H. Leave fill material stockpile areas completely free of excess fill materials.

#### 3.6 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01410.
- B. Tests and analysis of fill material will be performed in accordance with ANSI/ASTM D698.
- C. Compaction testing will be performed in accordance with ANSI/ASTM D2992 and D3017 test methods.
- D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.



3.7 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Recompact fills subjected to vehicular traffic.

END OF SECTION

## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### 1. PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. Work included: Provide cast-in-place concrete where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

##### 1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Quality control:
  - 1. Do not commence placement of concrete until mix designs have been reviewed by the Engineer and all governmental agencies having jurisdiction, and until copies are at the job site, the batch plant, and the building department.
- C. Materials and work shall conform to the requirements of all standards, codes, and recommended practices required in this section. In conflicts between standards, required standards and this specification, or this specification and the local building code, the more stringent requirement shall govern.
  - 1. Applicable Standards
    - a. "Specifications for Structural Concrete for Buildings" ACI 301 (latest edition).
    - b. "Building Code Requirement for Reinforced Concrete" ACI 318 (latest edition).
    - c. "Standard Specification for Ready-Mixed Concrete" ASTM C 94-73a
    - d. "Manual of Standard Practice" Concrete Reinforcing Steel Institute
  - 2. Field Reference Manual: Contractor shall have available in the field office "Specifications for Structural Concrete for Buildings" with selected references of ACI.
- D. Testing and Inspection
  - 1. Materials and operations shall be tested and inspected as work progresses. Failure to detect defective work shall not prevent rejection when defect is discovered, nor shall it obligate the Engineer for final acceptance. When it appears that any material furnished or work performed by the Contractor fails to fulfill specifications and requirements, the testing agency shall report such deficiency to the Owner, Engineer and the Contractor.
  - 2. Testing agencies shall meet the requirements of "Recommended Practice for

- Inspection and Testing Agencies for Concrete and Steel in Construction" (ASTM E 329).
3. The following testing services will be performed by the designated agency and shall be paid by the Owner:
    - a. Secure composite samples in accordance with "Method of Sampling Fresh Concrete (ASTM C 172)". Each sample shall be obtained from a different batch of concrete on a random basis, avoiding any selection of the test batch other than by a number selected at random before commencement of concrete placement.
    - b. Mold and cure four specimens from each sample in accordance with "Method of Making and Curing Concrete Compression and Flexural Specimens in the Field" (ASTM C31). Any deviations from the requirements of this Standard shall be recorded in the test report submitted. Four cylinders shall be laboratory cured after initial curing. Contractor shall provide cure box to maintain appropriate initial curing conditions per ASTM test methods.
    - c. Test specimens in accordance with "Method of Test for Compressive Strength of Molded Concrete Cylinders (ASTM C39)". Two specimens shall be tested at 28 days for acceptance and one shall be tested at seven days for information. One cylinder shall be reserved as a space for additional testing if required. The acceptance test results shall be the average of the strengths of the two specimens tested at 28 days. If one specimen in a test manifests evidence of improper sampling, molding or testing, it shall be discarded and the strength of the remaining cylinder shall be considered the test result. Should both specimens in a test show any of the above defects, the entire test shall be discarded. When high early strength concrete is used, the specimens shall be tested at the ages indicated in the Contract Documents.
    - d. Make at least one strength test for each 30 cubic yards, or fraction thereof, of each mix design of concrete placed in any one day.
    - e. Determine slump of the concrete sample for each strength test and whenever consistency of concrete appears to vary, using "Method of Test for Slump of Portland Cement Concrete" (ASTM C 143).
    - f. Determine air content of normal weight concrete sample for each strength test in accordance with either "Method of Test for Air Content of Freshly Mixed Concrete by the Pressure Method" (ASTM C231), "Method of Test for Air Content of Freshly Mixed Concrete by the Volumetric Method" (ASTM C173) or "Method of Test for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete" (ASTM C138).
    - g. Determine temperature of concrete sample for each strength test.
  4. The agency shall report all test results (two copies each) to the Engineer and Contractor immediately after they are performed. All test reports shall include the exact location in the work at which the batch represented by a test was deposited. Reports of strength tests shall include detailed information on storage and curing of specimens prior to testing.
  5. The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge, or release any requirement of the Contract Documents, nor to approve or accept any portion of the work.
  6. The Contractor shall provide the necessary testing services for the following:
    - a. Qualification of proposed materials and the establishment of mix designs.
    - b. Other testing services needed or required by the Contractor.

7. The use of testing services shall in no way relieve the Contractor of the responsibility to furnish materials and construction in full compliance with the Contract Documents.
8. The Contractor shall submit to the Engineer a list of the concrete materials and the concrete mix designs proposed for use with a written request for approval. This submittal shall include the results of all testing performed to qualify the materials and to establish the mix designs. No concrete shall be placed in the work until the Contractor has received such approval in writing.
9. To facilitate testing and inspection, the Contractor shall:
  - a. Furnish any necessary labor to assist the designated testing agency in obtaining and handling samples at the project or other sources of materials.
  - b. Advise the designated testing agency sufficiently in advance of operations to allow for completion of quality tests and for the assignment of personnel.
  - c. Provide and maintain for the sole use of the testing agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hours as required by "Method of Making and Curing Concrete Compression and Flexural Specimens in the Field" (ASTM C31).

E. Evaluation and Acceptance

1. The strength level of the concrete will be considered satisfactory if 95% of the strength test results and the averages of all sets of three consecutive strength test results equal or exceed specified strength and no individual test result is below specified strength by more than 500 psi.
2. Completed concrete work will be accepted when the requirements of "Specifications for Structural Concrete for Buildings" ACI 301 Chapter 18 have been complied with.
3. Completed concrete work which fails to meet a requirement of Chapter 18 shall be brought into compliance by repair or removed and replaced if required by the Engineer at the Contractor's expense.

### 1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
- B. Product data:
  1. Materials list of items proposed to be provided under this Section;
  2. Submit two copies of laboratory trial mix designs proposed in accordance with Method 1 ACI 301, or one copy each of 30 consecutive test results and the mix design used from a record of past performance in accordance with ACI 301 Method 2;
  3. Submit a sample ready-mixed concrete delivery ticket in accordance with the requirements of ASTM C-94.
  4. Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include special reinforcement required and openings through concrete structures.
  5. The Contractor shall furnish an affidavit from the manufacturer or fabricator, certifying that the materials or products delivered to the job meets the requirements specified. However, such certification shall not relieve the Contractor from the

responsibility of complying with any added requirements specified herein.

#### 1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01600.
- B. Delivery and storage of reinforcing:
  - 1. Use necessary precautions to maintain identification after bundles are broken.
  - 2. Store in a manner to prevent excessive rusting and fouling with dirt, grease, and other bond-breaking coatings.

### 2. PART 2 - PRODUCTS

#### 2.1 CEMENT

- A. Portland Cement, Type I conforming to ASTM C 150 Cement used in the work shall correspond to that upon which the selection of concrete proportions was based.
  - 1. Only one brand and manufacturer of approved cement shall be used for exposed concrete.
  - 2. Type III cement shall be used only with prior written approval from the Engineer.

#### 2.2 AGGREGATES

- A. Aggregates, conforming to ASTM C33, local aggregates not complying with this standard may be used providing it can be shown by special test or a record of past performance these aggregates produce concrete of adequate strength and durability.
  - 1. Fine aggregate, clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances, within allowable standards.
  - 2. Coarse aggregate, clean, uncoated, graded aggregate containing no clay, mud, loam or foreign matter.

#### 2.3 WATER

- A. Water, shall be fresh, clean, and drinkable.

#### 2.4 ADMIXTURES

- A. General
  - 1. Concrete admixtures, provide admixtures produced and serviced by established, reputable manufacturers and used in compliance with manufacturers recommendations.
- B. Air-Entraining Admixture
  - 1. Air-entraining agent, conforming to ASTM C 260 and as manufactured by the following:
    - a. "Sika Aer"; Sika Corp.
    - b. "MB-VR or MB-AE"; Master Builders.
    - c. "Dorex AEA"; W. R. Grace.
- C. Water-Reducing Admixture
  - 1. Water reducing, set-controlling admixture, conforming to ASTM C 494-71, type A

(water-reducing), type D (water-reducing and retarding and type E (water-reducing, accelerating) "Pozzolith" polyhydroxylated polymer admixture, manufactured by Master Builders, Euclid Chemical Co., or Sika Chemical Corp.

- D. Reinforcing Materials: Metal Reinforcement, shall be provided in accordance with the working drawings.
1. Reinforcing steel, conforming to ASTM A 615 "Specifications for Deformed Billet Steel Concrete Reinforcing".
  2. Welding wire fabric, conforming to ASTM A 185 "Specifications for Welded Steel Wire Fabric for Concrete Reinforcement".
  3. Steel wire, conforming to ASTM A 82 "Specifications for Cold-Drawn Steel Wire for Concrete Reinforcement".
  4. Plain smooth dowels shall conform to the requirements of ASTM A306 or ASTM A36. Provide cap sleeves for dowels and install as indicated on the Drawings. All concrete anchors shall be 1/2" diameter headed concrete anchors as detailed in the Drawings.
- E. Metal Accessories: Metal Accessories shall conform to the requirements of the Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice for Reinforcing Concrete Construction.
- F. Expansion Joint: Expansion Joint, conforming to ASTM D 1751.
- G. Exterior Slab - Kure-N-Seal W by Sonneborn.  
Interior Slab - Wet cured.
- H. Forms:
1. For Concrete Exposed to View: Use plywood with DFPA stamp of "B-B plyform". Plywood shall be 5/8" thick for supports 12" on center maximum or 3/4" thick supports 16" on center maximum. Use in as large sheets as practical to keep joints to a minimum.
  2. For Concrete Not Exposed to View: Clean, straight lumber, plywood or metal.
  3. Form ties used for exposed concrete surfaces shall have a minimum working strength when fully assembled of at least 3,000 pounds. Ties shall be so adjustable in length as to permit complete tightening of forms and of such type as to leave no metal closer than 1-1/2" to the surface. Ties shall be factory fabricated, removable or snap-off ties that will not allow form deflection and will not spall concrete upon removal, fitted with devices that will leave holes in the concrete surface not less than 1/2 inch or more than one inch in diameter and of depth not greater than diameter at the exposed surface.
  4. Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- I. Grout
1. Non-shrink Grout: CRD-C 588, factory pre-mixed grout.
    - a. Products: Subject to compliance with requirements, provide one of the following:  
  
Non-Metallic:

- (1) "Masterflow 713"; Master Builders
- (2) "SonogROUT"; Sonneborn-Contech.
- (3) "Euco-NS"; Euclid Chemical Co.
- (4) "Crystex"; L & M Cons. Chemical Co.
- (5) "Sure-Grip Grout"; Dayton Superior Co.
- (6) "Horngrout"; A.C. Horn.

J. Related Materials:

1. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
2. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
  - a. Polyethylene film.
  - b. Polyethylene-coated burlap.
3. Bonding Compound: Polyvinyl acetate or acrylic base, rewettable type.
  - a. Products: Subject to compliance with requirements, provide one of the following:
    - (1) "Weldcrete"; Larson Products
    - (2) "Everbond"; L & M Construction Chem.
    - (3) "EucoWeld"; Euclid Chemical Co.
    - (4) "Hornweld"; A.C. Horn.
    - (5) "Sonocrete"; Sonneborn-Contech.
4. Epoxy Adhesive: ASTM C 881, two component material suitable for use on dry or damp surfaces. Provide material "Type", "Grade", and "Class" to suite project requirements.
  - a. Products: Subject to compliance with requirements, provide one of the following:
    - (1) "Epoxite"; A.C. Horn.
    - (2) Sikadur Hi-Mod"; Sika Chemical Corp.
    - (3) Euco Epoxy 463 or 615"; Euclid Chem. Co.
    - (4) "Sure-Poxy"; Kaufman Products Inc.

## 2.5 CONCRETE MIXES

- A. Concrete for all parts of the work shall be of the specified quality capable of being placed without excessive segregation and, when hardened, of developing all characteristics required by these specifications and the contract documents.
- B. The specified compressive strength of the concrete  $f'_c$  for each portion of the structure shall be as designated in the contract documents. Strength requirements shall be based on 28-day compressive strength unless a different test age is specified.
- C. All concrete which will be exposed to the weather shall be air-entrained with an air content of 6% plus or minus 1%. All other concrete shall be air-entrained with an air content of 4% plus or minus 1%.
- D. The concrete shall be proportioned and produced having a maximum slump of 3 inches or less for slabs and 3 inches for footings. A tolerance of up to 1 inch above the indicated maximum shall be allowed for individual batches provided the average for all batches or the most recent 4 batches tested, whichever is fewer, does not exceed the maximum limit. A lower slump up to a minimum allowable slump of 1" is permissible provided the Contractor

previously demonstrates his ability to properly place and consolidate the concrete.

- E. The nominal maximum size of coarse aggregate shall be not more than 3/4 inches (No. 67) as described by ASTM C33. Aggregate for concrete masonry fill shall be 1/2 inches maximum.
- F. Admixtures used in the concrete shall not contain any lignin or chloride ions added during manufacture. The use of calcium chloride in concrete is not permitted. All admixtures to be used in the concrete must be approved in advance by the Engineer.
- G. The proportions of ingredients shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement by the methods of placing and consolidation employed on the work, but without permitting the materials to segregate or excessive free water to collect on the surface. The proportions of ingredients shall be selected in accordance with Section 3.8.2 Method 1 or 2, to produce the proper placeability, durability, strength, and other required properties.

### 3. PART 3 - EXECUTION

#### 3.1 FORMWORK

- A. Formwork shall be in accordance with Chapter 4, ACI 301 with the following additional requirements:
  - 1. Earth cuts may be used as side forms for vertical surfaces for footings and other areas as indicated in the Drawings provided the soil is stable, the subgrade is wetted immediately prior to pouring and provide 1" on each side of the minimum design profiles and dimensions shown on the Drawings.
  - 2. In cold weather, removal of form work should be deferred or form work should be replaced with insulation blankets, to avoid thermal shock and consequent crazing of the concrete surface.

#### 3.2 REINFORCEMENT

- A. Reinforcement shall be in accordance with Chapter 5, ACI 301.

#### 3.3 JOINTS

- A. Joints and embedded items shall be in accordance with Chapter 6, ACI 301.

#### 3.4 PRODUCTION OF CONCRETE

- A. The production of concrete shall be in accordance with Chapter 7, ACI 301 with the following additional requirements:
  - 1. Controls shall be provided to insure that the batch cannot be discharged until the required mixing time has elapsed. At least three-quarters of the required mixing time shall take place after the last of the mixing water has been added.

Ready mixed cement concrete may be transported in truck mixers or truck agitators operating at the specified agitation speed, or in approved non-agitating equipment,



under the following conditions:

- a. Truck Mixers and Truck Agitators - The concrete shall be delivered to the site of the work and discharged within one and one-half hours after the completion of the mixing. In hot weather or under conditions contributing to quick stiffening of the concrete or when the temperature of the concrete is 85 F or above, the time between completion of the mixing and discharge of the concrete shall not exceed one hour. It is permissible, anytime after mixing, to stop agitating for periods not to exceed 30 consecutive minutes each. At the end of any non-agitation period, the concrete must be agitated for at least 20 revolutions. The total drum revolutions and the specified discharge time shall not be exceeded. The concrete, at the point of placement, shall be of the consistency and workability required for the job. The rate of discharge of the plastic concrete from the drum shall be controlled by the speed of the rotation of the drum in the discharge direction with the discharge gate fully open. Mixed or agitated concrete which has remained in the drum of the truck mixer or truck agitator for more than 30 minutes without mechanical agitation shall not be used.

A truck mixer and truck agitator shall be operated within a capacity not to exceed 63 or 80 percent, respectively, of the gross volume of the drum and at the specified speed of rotation for mixing or agitating. Truck mixers or truck agitators used for transporting mixed concrete shall be operated within the specified limits of capacity and speed of rotation for mixing or agitating.

- b. Central-Plant-Mixed Cement Concrete - Vehicles for transporting central-plant-mixed cement concrete shall be approved horizontal-axis or inclined-axis revolving-drum agitators or approved truck mixers of the same design operated at agitating speed. Such vehicles, when loaded to their rated capacity, shall be capable of maintaining the mixed concrete in a thoroughly mixed and uniform mass and of discharging the concrete without segregation.
- c. Other Concrete Hauling Equipment - In addition to the revolving-drum type hauling equipment, the concrete may also be transported in approved truck-mounted concrete hauling bodies of agitator or non-agitator type.

The bodies of the equipment shall be smooth, watertight, containers equipped to permit controlled discharge of the concrete. Covers meeting with the approval of the Engineer shall be provided for protection against weather.

The concrete shall be delivered to the site of the work in a thoroughly mixed and uniform mass and totally discharged with a satisfactory degree of uniformity. Slump tests of representative samples shall not differ by more than one inch nor exceed the specified requirements. Discharge shall be completed within 30 minutes after the mixing of the concrete.

- d. Mixing and Delivery Control - The interval between placing succeeding batches shall be controlled, and in no case shall exceed 30 minutes.

Two-way radio communications shall be provided, and maintained, by the Contractor between the proportioning plant and the site of the work for the purpose of providing uniformity and control of the concrete mixture.

The method and time of delivery of each load of ready-mixed cement concrete shall be controlled by plant slips issued to the driver and signed by the authorized representative of the Engineer at the Plant. At concrete paving plants, automatic clocks for recording time and date will be required. The plant slips shall contain the name and location of the plant, the size of the batch, the class of concrete, the time of completion of the mixing, and, when required, the recording of the revolution counter.

Upon arrival, the plant slip shall be delivered by the driver to the authorized representative of the Engineer at the site of the work. No concrete shall be used until the data noted on the plant slip has been verified and found to comply with the specification requirements.

2. Cold weather concreting procedures shall be required from in the fall, from the time of the first frost when the mean daily temperature at the job site falls below 40 degrees F for more than one day in a row until in the spring after the mean daily temperature rises above 40 degrees F for more than three successive days. Cold weather concreting is not permitted unless the Contractor shall submit, in writing, his cold weather concreting procedures to the Engineer for review, for concrete construction during this period. All cold weather concreting shall be in accordance with ACI 306-86.
3. Hot weather concreting procedures shall be required when the ambient temperature is 85 degrees F or above. Hot weather concreting is not permitted unless the Contractor shall submit, in writing, his hot weather concreting procedures to the Engineer for review. All hot weather concreting shall be in accordance with ACI 305-77.

### 3.5 PLACING

- A. Concrete shall be placed in accordance with Chapter 8, ACI 301 with the following additional requirements:
  1. General - Concrete shall be deposited continuously, or in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, construction joints shall be located as shown in the Contract Documents or as approved. Placing shall be carried on at such a rate that the concrete which is being integrated with fresh concrete is still plastic. Concrete which has partially hardened or has been contaminated by foreign materials shall not be deposited. Temporary spreaders in forms shall be removed when the concrete placing has reached an elevation rendering their service unnecessary. They may remain embedded in the concrete only if made of metal or concrete and if prior approval has been obtained.

The Contractor shall submit to the Engineer for approval, a schedule showing the methods and sequence of placing concrete before work is started. Before placing the concrete, the Contractor shall notify the Engineer 48 hours prior to each pour

and inform him as to the location and time of the pour and the type and quantity of concrete to be placed.

Before placing the concrete, the Contractor shall make all necessary arrangements and have all materials on hand, and in place if necessary, for curing and protecting the concrete. Concrete footings for abutments, piers, wing walls, and retaining walls shall not be constructed until the foundation material has been examined and approved by the Engineer. The Contractor may be required to drill or to drive a bar into the foundation material below the bottom of the footing to a depth sufficient to determine the suitability of the material.

Suitable means shall be used for placing concrete without segregation. Concrete which is segregated, too wet or not of uniform consistency, shall be removed and be discarded. Arrangement shall be made to use tremies, "elephant trunks", bottom dump buckets, or concrete buggies wherever practicable. In most cases, it will be necessary to use an "elephant truck" to discharge the concrete into narrow or deep forms. Long chutes shall be used only when approved, and if subsequently found unsatisfactory their use shall be discontinued. Short troughs, pipes or chutes of metal, or of wood lined with metal, may be used when feasible. Where the slope of the chute is steep, a satisfactory method to control the flow of the concrete shall be used. The concrete mixture shall not be dropped for a distance of more than 4 feet. Concrete may be placed by means of pumps or other similar devices only with written approval.

Pipes, tremies, troughs, chutes made of aluminum will not be permitted for the transmission of concrete.

Concrete shall be placed in the forms within the time intervals specified in Section 7.2.2.5. Concrete not to be vibrated shall be placed in horizontal layers of not more than 8 inches in depth. Concrete to be vibrated shall be placed in horizontal layers of not more than 15 inches in depth. Special care shall be taken to fill each part of the form by depositing the concrete as close to its final position as possible. Working or flowing of concrete along the forms from point of deposit will not be permitted, except as hereinafter provided. It shall be manipulated the minimum practical amount for proper placement. Care shall be taken to work the concrete under and around all reinforcement without displacing it. Concrete shall be so placed that after it has been struck off and the initial shrinkage has taken place, the upper surface of the concrete will be at the specified elevation.

In areas where reinforcement extends through or beyond a construction joint, concrete to be vibrated shall not be placed adjacent to previously placed concrete until a time interval of not less than 48 hours has elapsed.

2. Concrete shall not be deposited under water.

### 3.6 FINISHING OF FORMED SURFACES

- A. Finishing of formed surfaces shall be in accordance with Chapter 10, ACI 301 with the following additional requirements:
  1. All concrete with formed surfaces shall have a smooth form finish.
  2. All exterior and interior vertical surfaces exposed to view shall have a grout cleaned finish in accordance with Section 10.3.2. All exposed edges shall have a 3/4" x 3/4"

chamfer unless noted otherwise.

### 3.7 SLABS

- A. Slabs shall be in accordance with Chapter 11, ACI 301 with the following additional requirements:
  - 1. Finishes - Concrete floors shall be accurately screened and floated to required levels providing allowance for total thickness of any applied finish materials. Floor shall slope uniformly to floor drains where such occurs. All floors shall be steel troweled to a smooth dense finish.
  - 2. All exterior concrete surfaces shall have a broom or belt finish. All exterior steps shall have a non-slip finish.
  - 3. Floor slabs shall be placed to a Class A tolerance.

### 3.8 CURING AND PROTECTION

- A. Curing and protection shall be in accordance with Chapter 12, ACI 301 with the following additional requirements:
  - 1. Immediately after completion of concrete placement and finishing, the interior concrete surface shall be wet cured only receiving sealer- hardener floor finish.

### 3.9 REPAIR OF SURFACE DEFECTS

- A. Repair of surface defects shall be in accordance with Chapter 9, ACI 301.

### 3.95 ARCHITECTURAL CONCRETE

- A. Architectural concrete shall be in accordance with Chapter 13, ACI 301.

END OF SECTION



## SECTION 03350

### POLISHED CONCRETE FINISHING

#### 1.0 PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Polished concrete.
- B. Dyed and polished concrete.

##### 1.2 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete.
- B. Section 07920 - Joint Fillers.

##### 1.3 REFERENCES

- A. American Concrete Institute (ACI): ACI 302.1R - Guide for Concrete Floor and Slab Construction.
- B. American National Standards Institute (ANSI): Standards B-101.1/2009.
- C. ASTM International (ASTM):
  - 1. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
  - 2. ASTM C 171 - Standard Specification for Sheet Materials for Curing Concrete.
  - 3. ASTM C 779 - Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.
- D. National Floor Safety Institute (NFSI): NFSI Test Method 101-A - Standard for Evaluating High-Traction Flooring Materials.

##### 1.4 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide polished flooring that has been designed, manufactured and installed to achieve the following:
  - 1. Abrasion Resistance: ASTM C779, Method A, high resistance, no more than 0.008 inch (0.20 mm) wear in 30 minutes.
  - 2. Reflectivity: Increase of 35% as determined by standard gloss meter.
  - 3. Waterproof Properties: Rilem Test Method 11.4, 70% or greater reduction in absorption.
  - 4. High Traction Rating: NFSI 101-A, ANSI B-101.1 2009 non-slip properties.
- B. Design Requirements:
  - 1. Hardened Concrete Properties:

- a. Minimum Concrete Compressive Strength: 3500 psi (24 MPa).
  - b. Normal Weight Concrete: No lightweight aggregate.
  - c. Non-air entrained.
2. Placement Properties:
- a. Natural concrete slump of 4-1/2 inches to 5 inches (114 to 127 mm). Admixtures may be used.
  - b. Flatness Requirements:
    - 1) Overall FF 50.
    - 2) Local FF 40.
3. Hard-Steel Troweled (3 passes) Concrete: No burnishing marks. Finish to ACI 302.1R, Class 5 floor.
- a. Class 6 floors, special colored mineral aggregate hardener with repeated hard steel trowel finish.
4. Curing Options:
- a. Membrane forming curing compounds (ASTM C309, Type 1, Class B, all resin, dissipating cure). 1) Acrylic curing and sealing compounds not recommended.
  - b. Sheet membrane (ASTM C171); polyethylene film not recommended.
  - c. Damp Curing: Seven day cure.

## 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Shop Drawings: Indicate information on shop drawings as follows:
  - 1. Typical layout including dimensions and floor grinding schedule.
  - 2. Plan view of floor and joint pattern layout.
  - 3. Areas to receive colored surface treatment.
  - 4. Hardener, sealer, densifier identified in notes.
- C. Product Data: Submit product data, including manufacturer's SPEC-DATA product sheet, for specified products.
  - 1. Material Safety Data Sheets (MSDS).
  - 2. Preparation and concrete grinding procedures.
  - 3. Colored Concrete Surface, Dye Selection Guides.
- D. Quality Assurance Submittals:
  - 1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties as cited in Performance Requirements.
  - 2. Certificates:
    - a. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
    - b. Letter of certification from the National Floor Safety Institute confirming the system has been tested and passed phase Two Level of certification when tested by Method 101-A. ANSI B-101.1 2009 non-slip properties.
    - c. Current contractor's certificate signed by manufacturer declaring Contractor as an approved installer of polishing system.
  - 3. Manufacturer's Instructions: Manufacturer's installation instructions.
- E. Warranty: Submit warranty documents specified.

- F. Operation and Maintenance Data: Submit operation and maintenance data for installed products.
  - 1. Manufacturer's instructions on maintenance renewal of applied treatments.
  - 2. Protocols and product specifications for joint filing, crack repair and/or surface repair.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Installer with a minimum of 5 years' experience in performing work of this section who has specialized in installation of work similar to that required for this project.
  - 2. Installer trained and holding a current certificate as a FGS PermaShine installer.
  - 3. Current Certification from the CPAA stating that the technicians are trained craftsmen.
- B. Concrete finishing components and materials shall be from single manufacturer.
- C. Manufacturer Qualifications:
  - 1. Manufacturer capable of providing field service representation during construction and approving application method.
  - 2. Manufacturer shall have a minimum 5 years of experience in manufacturing components similar to or exceeding requirements of project.
- D. Regulatory Requirements: Comply with NFSI Test Method 101-A Phase Two Level II High Traction Material.
- E. Pre-installation Meetings: Conduct a pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Review the following:
  - 1. Environmental requirements.
  - 2. Scheduling and phasing of work.
  - 3. Coordinating with other work and personnel. Remind all trades that they are working on a surface that is to become a finished surface.
  - 4. Protection of adjacent surfaces.
  - 5. Surface preparation.
  - 6. Repair of defects and defective work prior to installation.
  - 7. Cleaning.
  - 8. Installation of polished floor finishes.
  - 9. Application of liquid hardener, densifier.
  - 10. Protection of finished surfaces after installation.
  - 11. placing of materials on the concrete surface that may cause staining, etching or scratching

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original packaging with identification



labels and seals intact.

- C. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

## 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
- B. Protect Concrete Slab:
  - 1. Protect from petroleum stains during construction.
  - 2. Diaper hydraulic power equipment.
  - 3. Restrict vehicular parking.
  - 4. Restrict use of pipe cutting machinery.
  - 5. Restrict placement of reinforcing steel on slab.
  - 6. Restrict use of acids or acidic detergents on slab.
- C. Waste Management and Disposal:
  - 1. Separate waste materials for Reuse and Recycling in accordance with Section 01 74 19 - Construction Waste Management and Disposal.
  - 2. Remove from site and dispose of packaging materials at appropriate recycling facilities.

## 1.9 PROJECT AMBIENT CONDITIONS

- A. Installation Location: Comply with manufacturer's written recommendations.

## 1.10 SEQUENCING

- A. Sequence with Other Work: Comply with manufacturer's written recommendations for sequencing construction operations.

## 1.11 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under Contract Documents.

## 2.0 PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: L&M Construction Chemicals, which is located at: 1 LATICRETE Park N.; Bethany, CT 06524-3423; Toll Free Tel: 800-362-3331; Tel: 402-453-6600; Email: request info (info@lmcc.com); Web: www.laticrete.com/lmcc
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of

## Section 01 60 00 - Product Requirements.

### 2.2 POLISHED CONCRETE

#### A. Products/Systems:

1. Hardener, Sealer, Densifier: Proprietary, water based, odorless liquid, VOC compliant, environmentally safe chemical hardening solution leaving no surface film.
  - a. Acceptable Material: L & M Construction Chemicals, Inc., FGS Hardener Plus. Basis of design.
  - b. Acceptable Material: L&M Construction Chemicals, Inc., Lion Hard may be substituted when conditions exist where disposing of rinse water is in conflict with local building codes.
2. Joint Filler: Semi-rigid, 2-component, self-leveling, 100% solids, rapid curing, polyurea control joint and crack filler with Shore A 80 or higher hardness.
  - a. Acceptable Material: L & M Construction Chemicals, Inc., Joint Tite 750.
3. Oil Repellent Sealer: Ready to use, silane, siloxane and fluoropolymers blended water based solution sealer, quick drying, low-odor, oil and water repellent, VOC compliant and compatible with chemically hardened floors.
  - a. Acceptable Material: L & M Construction Chemicals, Inc., Petrotex.
4. Concrete Dyes: Fast-drying dye, packaged in premeasured units ready for mixing with water or VOC exempt solvent; formulated for application to polished cementitious surfaces.
  - a. Acceptable Material: L & M Construction Chemicals, Inc., Vivid Concrete Dyes or Vivid Dye WB Plus.
  - b. Color: [\_\_\_\_\_].
5. Cleaning Solution: Proprietary, mild, highly concentrated liquid concrete cleaner and conditioner containing wetting and emulsifying agents; biodegradable, environmentally safe and certified High Traction by National Floor Safety Institute (NFSI).
  - a. Acceptable Material: L & M Construction Chemicals, Inc., FGS Concrete Conditioner.
6. Stain Guard Sealer: Ready to use, is a low odor, VOC compliant, topical sealer consisting of low molecular emulsified cross-linking, coupling polymers that effectively protect concrete and other natural stone floor surfaces from the damaging effects of staining, defacing and deterioration due to contaminant penetration.
  - a. Acceptable Material: L& M Construction Chemicals, Inc. Permaguard SPS.
7. Finish: Standard High gloss (HG-1), 1500 grit.
8. Finish: Medium gloss (MG-2), 800.
9. Finish: Very high gloss (VGH-3), 3000 grit.

### 3.0 PART 3 EXECUTION

#### 3.1 EXAMINATION

##### A. Site Verification of Conditions:

1. Verify that concrete substrate conditions, which have been previously installed under other sections or contracts, are acceptable for product installation in accordance with manufacturer's instructions prior to installation of concrete

finishing materials.

- B. Do not begin installation until substrates have been properly prepared.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Verify Concrete Slab Performance Requirements:
  - 1. Verify concrete is cured to 28 day duration and 3500 psi (24 MPa) strength.
  - 2. Verify concrete surfaces have received a hard steel-trowel finish (3 passes) during placement.
  - 3. Verify overall floor flatness is a minimum of Ff 40.

### 3.2 PREPARATION

- A. Ensure surfaces are clean and free of dirt and other foreign matter harmful to performance of concrete finishing materials.
- B. Examine surface to determine soundness of concrete for polishing.

### 3.3 INSTALLATION

- A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions.
- B. Floor Surface Polishing and Treatment:
  - 1. Provide polished concrete floor treatment in entirety of slab indicated by drawings. Provide consistent finish in all contiguous areas.
  - 2. Apply floor finish prior to installation of fixtures and accessories.
  - 3. Diamond polish concrete floor surfaces with power disc machine recommended by floor finish manufacturer. Sequence with coarse to fine grit. Installer to determine the optimum starting grit in order to achieve the specified aggregate exposure.
    - a. Comply with manufacturer's recommended polishing grits for each sequence to achieve desired finish level. Following the initial passes of metal bond diamonds, the installer shall drop back a minimum of one grit level when transitioning to resin bond diamonds. The separation in grit designation shall be a minimum of 50 for the transitioning step. The installer shall refine each abrasive grit to its fullest potential before moving on to the next level. Floor shall be thoroughly scrubbed between each grit pass to remove all loose material. Level of sheen shall match that of approved mock-up.
    - b. Expose aggregate in concrete surface only as determined by approved mock-up.
    - c. All concrete surfaces shall be as uniform in appearance as possible.
  - 4. Dyed and Polished Concrete:
    - a. Locate demarcation line between dyed surfaces and other finishes.
    - b. Polish concrete to the 400 grit level, (200 grit for water based dyes).
    - c. Apply pre-mixed dyes to polished concrete surface.
    - d. Allow dye to dry.
    - e. Remove residue with water and buffer pad; reapply as necessary for

desired result.

5. Hardener and Densifier Application:
  - a. First coat of FGS Hardener Plus at 250 ft<sup>2</sup>/gal (6.25 m<sup>2</sup>/L), following the 400 grit level. (Lion Hard at 400-600 sq ft / gallon).
  - b. Second coat of FGS Hardener Plus at 350 ft<sup>2</sup>/gal (8.75 m<sup>2</sup>/L), prior to the final polishing pass (Lion Hard at 600-800 sq ft / gallon).
  - c. Follow manufacturer's recommendations for drying time between successive coats.
6. Remove defects and re-polish defective areas.
7. Finish edges of floor finish adjoining other materials in a clean and sharp manner.

#### 3.4 ADJUSTMENTS

- A. Re-polish those areas not meeting specified gloss levels per mock-up.
- B. Fill joints flush to surface prior to the start of polishing operations.

#### 3.5 FINAL CLEANING

- A. Upon completion, remove surplus and excess materials, rubbish, tools and equipment.

#### 3.6 PROTECTION

- A. Protect installed product from damage during construction in accordance with manufacturer's recommendations.

END OF SECTION



## SECTION 04100

### MORTAR

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Mortar and grout for masonry.

##### 1.2 RELATED WORK

- A. Section 04300 - Unit Masonry System: Installation of mortar and grout.

##### 1.3 REFERENCES

- A. ASTM C5 - Quicklime for Structural Purposes.
- B. ASTM C91 - Masonry Cement.
- C. ASTM C94 - Ready-Mixed Concrete.
- D. ASTM C144 - Aggregate for Masonry Mortar.
- E. ASTM C150 - Portland Cement.
- F. ASTM C207 - Hydrated Lime for Masonry Purposes.
- G. ASTM C270 - Mortar for Unit Masonry.
- H. ASTM C387 - Packaged, Dry, Combined Materials, for Mortar and Concrete.
- I. ASTM C404 - Aggregates for Masonry Grout.
- J. ASTM C476 - Grout for Masonry.
- K. ASTM C595 - Blended Hydraulic Cement.
- L. ASTM C780 - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
- M. ASTM C1019 - Method of Sampling and Testing Grout.
- N. IMIAC - International Masonry Industry All-Weather Council: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

##### 1.4 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Include design mix, indicate Proportion or Property method used, required environmental conditions, and admixture limitations.
- C. Samples: Submit two ribbons of mortar color, illustrating color and color range.
- D. Submit test reports on mortar indicating conformance to ASTM C270.
- E. Submit test reports on grout indicating conformance to ASTM C476.
- F. Submit manufacturer's certificate that products meet or exceed specified requirements.
- G. Submit premix mortar manufacturer's installation instructions under provisions of Section 01300.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

#### 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Cold Weather Requirements: IMIAC - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

### 2. PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type I, gray color.
- B. Blended Cement: ASTM C595, Type.
- C. Masonry Cement: ASTM C91, Type M, S, and N.
- D. Mortar Aggregate: ASTM C144, standard masonry type.
- E. Hydrated Lime: ASTM C207.
- F. Quicklime: ASTM C5, non-hydraulic type.
- G. Premix Mortar: ASTM C387, using gray cement, Normal strength.
- H. Grout Aggregate: ASTM C404.

I. Water: Clean and potable.

## 2..2 MORTAR COLOR

A. Mortar color in exterior concrete masonry to match color of masonry.

## 2..3 ADMIXTURES

A. Water repellent additive for exterior decorative block masonry units.

## 2..4 MORTAR MIXES

A. Mortar for Load Bearing Walls and Partitions: ASTM C270, Type S using the Property Method.

B. Mortar for Non-load Bearing Walls and Partitions: ASTM C270, Type S using the Property Method.

C. Exterior Mortar Type S using the Property Method with a cement and lime composition.

## 2..5 MORTAR MIXING

A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.

B. Add mortar color in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.

C. Do not use anti-freeze compounds to lower the freezing point of mortar.

D. If water is lost by evaporation, retemper only within two hours of mixing.

E. Use mortar within two hours after mixing at temperatures of 80 degrees F (26 degrees C), or two-and-one-half hours at temperatures under 50 degrees F (10 degrees C).

## 2..6 GROUT MIXES

A. Bond Beams: 3000 psi (21 MPa) strength at 28 days; 7-8 inches slump; premixed type in accordance with ASTM C94.

## 2..7 GROUT MIXING

A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and/or course grout as required.

B. Do not use anti-freeze compounds to lower the freezing point of grout.

## 3. PART 3 EXECUTION



### 3.1 EXAMINATION

- A. Request inspection of spaces to be grouted.

### 3.2 PREPARATION

- A. Plug cleanout holes with block masonry units to prevent leakage of grout materials. Brace masonry for wet grout pressure.

### 3.3 INSTALLATION

- A. Install mortar in accordance with manufacturer's instructions as required to meet specifications.

### 3.4 GROUT INSTALLATION

- A. Install grout to requirements of the specific masonry Sections.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not displace reinforcement while placing grout.
- D. Remove grout spaces of excess mortar.

END OF SECTION

## SECTION 04300

### UNIT MASONRY SYSTEM

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Concrete masonry and brick units.
- B. Decorative concrete masonry units.
- C. Reinforcement, anchorage, and accessories.

##### 1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 05120 - Structural Steel: Placement of steel anchors for masonry.
- B. Section 05210 - Steel Joists: Placement of steel bearing pads for joists.

##### 1.3 RELATED SECTIONS

- A. Section 01400 - Quality Control: Testing laboratory services.
- B. Section 04100 - Mortar: Mortar and grout.
- C. Section 07900 - Joint Sealers: Rod and sealant at control and expansion joints.

##### 1.4 REFERENCES

- A. ANSI/ASTM A82 - Cold-Drawn Steel Wire for Concrete Reinforcement.
- B. ANSI/ASTM C34 - Structural Clay Load Bearing Wall Tile.
- C. ANSI/ASTM C55 - Concrete Building Brick.
- D. ANSI/ASTM C56 - Structural Clay Non-Load Bearing Tile.
- E. ANSI/ASTM C73 - Calcium Silicate Face Brick (Sand-Lime Brick).
- F. ANSI/ASTM C126 - Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
- G. ANSI/ASTM C212 - Structural Clay Facing Tile.
- H. ANSI/ASTM C216 - Facing Brick (Solid Masonry Units Made From Clay or Shale).
- I. ANSI/ASTM C315 - Clay Flue Linings.

- J. ANSI/ASTM C530 - Structural Clay Non-Load Bearing Screen Tile.
- K. ANSI/ASTM C652 - Hollow Brick (Hollow Masonry Units Made From Clay or Shale).
- L. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- M. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- N. ASTM A525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
- O. ASTM A580 - Stainless and Heat-Resisting Steel Wire.
- P. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- Q. ASTM B370 - Copper Sheet and Strip for Building Construction.
- R. ASTM C27 - Fireclay and High-Aluminum Refractory Brick.
- S. ASTM C62 - Building Brick (Solid Masonry Units Made From Clay or Shale).
- T. ASTM C90 - Hollow Load Bearing Concrete Masonry Units.
- U. ASTM C129 - Non-Load Bearing Concrete Masonry Units.
- V. ASTM C145 - Solid Load Bearing Concrete Masonry Units.
- W. ASTM C744 - Prefaced Concrete and Calcium Silicate Masonry Units.
- X. ACI 530.1-92/ASCE 6-92/TMS 602-92 Specifications for Masonry Structures.
- Y. UL - Underwriters' Laboratories.

#### 1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Submit product data for decorative prefaced masonry units, fabricated wire reinforcement and steel anchor and ties.
- C. Submit samples under provisions of Section 01300.
- D. Submit four samples of each decorative block and face brick units to illustrate color, texture and extremes of color range.
- E. Submit manufacturer's certificate under provisions of Section 01400 that products meet or exceed specified requirements.
- F. Submit manufacturer's installation instructions under provisions of Section 01300.

#### 1.6 QUALIFICATIONS

- A. Installer: Company specializing in performing the work of this Section with minimum five (5) years documented experience.

#### 1.7 REGULATORY REQUIREMENTS

- A. Conform to UL Assembly requirements for fire rated masonry construction.

#### 1.8 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this Section.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.

#### 1.10 ENVIRONMENTAL REQUIREMENTS

- A. Cold and Hot Weather Requirements: ACI 530.1-92 Specifications for Masonry Structures.

### 2. PART 2 PRODUCTS

#### 2.1 CONCRETE MASONRY UNITS

- A. Hollow Load Bearing Block Units: ASTM C90, Grade N, Type I - Moisture Controlled; Controlled normal weight and light weight.
- B. Solid Load Bearing Block Units: ASTM C145, Grade N, Type I - Moisture Controlled.
- C. Hollow Non-Load Bearing Block Units: ASTM C129, Type I - Moisture Controlled; normal weight.
- D. Decorative Block Units: ASTM C90, Grade N, Type I - Moisture Controlled; color as selected by Engineer to the following design:
  - 1. Split Face.
  - 2. Matt Face.
  - 3. Ground Face.
- E. Integral water repellant Additive - Acme-Shield as manufactured by Acme Hardesty.

#### 2.2 BRICK MASONRY UNITS

- A. Nitterhouse Masonry Products, LLC - General Shale -Red Velour.

#### 2.3 REINFORCEMENT AND ANCHORAGE

- A. Single Wythe Joint Reinforcement: Ladder type; hot dip galvanized after fabrication

cold-drawn steel conforming to ANSI/ASTM A82, 9 gage side rods with 9 gage cross ties.

- B. Multiple Wythe Joint Reinforcement without insulation: Ladder type; with adjustable 3/16 inch ties at 16 inches o.c.
- C. Multiple Wythe Joint Reinforcement with insulation: Ladder type, triangular 3/16 ties with restraint bar and vertical J bars.
- D. Reinforcing Steel: ASTM A615, 60 ksi yield grade, deformed billet bars, unprotected finish.
- E. Strap Anchors: bent steel shape, 1-1/4 x inch wide x 1/8 inch thick, galvanized to ASTM A123 G90 finish.
- F. Formed Steel Wire Wall Ties: 3/16" gage Thick, galvanized steel finish.
- G. Dovetail Anchors: Bent steel strap, 1-1/4 inch Size x 1/8 inch thick, galvanized to ASTM A123 G90 finish.
- H. Break away fire anchors: Heckman Building Products using rolled zinc alloy 710 material.

#### 2.4 FLASHINGS

- A. The thru-wall masonry flashing shall be 40 mil EPDM membrane with a 2 ½ wide, 24 gage stainless steel edge with matt finish. The metal edge is to be formed with a 3/8" 45 degree turned down beveled drip edge. The EPDM is to be adhered to the metal edge and 6" up the backup wall with EPDM bonding adhesive or with a self adhesive backer.

#### 2.5 ACCESSORIES

- A. Preformed Control Joints: Polyvinylchloride material. Provide with corner and tee accessories, cement fused joints.
- A. Joint Filler: Closed cell neoprene oversized 50 percent to joint width; self-expanding.
- B. Building Paper: #15 asphalt saturated felt.
- C. Weep Holes: Preformed rectangular plastic tubes.
- D. Cleaning Solutions: Non-acidic, not harmful to masonry work or adjacent materials.
- E. Masonry core insulation: Insulation shall be Korfil Block Insulation as manufactured by Concrete Block Insulation Systems.

#### 2.6 LINTELS

- A. Precast Concrete Lintels: Prefabricated units that conform to the provisions of ASTM C901 and the details shown on the Project Drawings. 3000 psi strength at 28 days,

unless otherwise required, provide prefabricated masonry lintels that have an appearance similar to the masonry units used on the wall surrounding each lintel.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other Sections of work are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Beginning of installation means installer accepts existing conditions.

#### 3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other Sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

#### 3.3 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Lay concrete masonry units in running bond. Course one unit and one mortar joint to equal 8 inches. Form concave mortar joints.
- E. Lay brick units in running bond. Course three brick units and three mortar joints to equal 8 inches. Form concave mortar joints.
- F. Lay prefinished decorative units to coursing of one unit and one mortar joint to equal 8 inches. Form concave mortar joints.

#### 3.4 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as Work progresses.

- E. Interlock intersections and external corners.
- F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- G. Perform jobsite cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- H. Cut mortar joints flush where ceramic or quarry wall tile or cement parging is required.
- I. Isolate masonry partitions from vertical structural framing members with a control joint.
- J. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler. Provide fire rated seal when required to comply with rating of wall.

### 3.5 WEEPS AND VENTS

- A. Install weep holes in veneer at 24 inches on center horizontally above through-wall flashing at head joints.

### 3.6 REINFORCEMENT AND ANCHORAGES - SINGLE WYTHE MASONRY

- A. Install horizontal joint reinforcement 16 inches o.c.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches. Extend minimum 16 inches each side of openings.

### 3.7 REINFORCEMENT AND ANCHORAGES - REINFORCED UNIT MASONRY

- A. Install horizontal joint reinforcement 16 inches oc.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches. Extend minimum 16 inches each side of openings.
- E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- F. Embed anchors embedded in concrete or attached to structural steel members. Embed anchorages in every second block joint.

### 3.8 MASONRY FLASHINGS

- A. Extend flashings through veneer, turn up minimum 8 inches and bed into mortar joint of masonry back-up.
- B. Lap end joints minimum 6 inches and seal watertight.
- C. Use flashing manufacturer's recommended adhesive and sealer.

### 3.9 LINTELS

- A. Install loose steel and precast concrete lintels over window openings and door openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
  - 1. Openings Up To 42 Inches Wide: Place two, No. 4 reinforcing bars 1 inch from bottom web.
  - 2. Openings From 42 Inches Up To 78 Inches Wide: Place two, No. 5 reinforcing bars 1 inch from bottom web.
  - 3. Openings Over 78 Inches: Reinforce openings as detailed.
- C. Use single piece reinforcing bars only.
- D. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- E. Place and consolidate grout fill without displacing reinforcing.
- F. Allow masonry lintels to attain specified strength before removing temporary supports.
- G. Maintain minimum 8 inch bearing on each side of opening.

### 3.10 GROUTED COMPONENTS

- A. Reinforce bond beam with 2, No. 5 bars, placed 1" above bottom web unless noted otherwise.
- B. Lap splices minimum 24 bar diameters.
- C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- D. Place and consolidate grout fill without displacing reinforcing.
- E. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.



### 3.11 ENGINEERED MASONRY

- A. Lay masonry units with core cells vertically aligned and cavities clear of mortar and unobstructed.
- B. Place mortar in masonry unit bed joints back 1/4 inch from edge of unit grout spaces, bevel back and upward. Permit mortar to cure 3 days before placing grout.
- C. Reinforce masonry unit cores and cavities with reinforcement bars and grout as indicated.
- D. Retain vertical reinforcement in position at top and bottom of cells and at intervals not exceeding 6 feet. Splice reinforcement as noted on drawings.
- E. Wet masonry unit surfaces in contact with grout just prior to grout placement.
- F. Grout spaces less than 2 inches in width with fine grout using low lift grouting techniques. Grout spaces 2 inches or greater in width with course grout using high or low lift grouting techniques.
- G. When grouting is stopped for more than one hour, terminate grout 1-1/2 inch below top of upper masonry unit to form a positive key for subsequent grout placement.
- H. Low Lift Grouting: Place first lift of grout to a height of 16 inches and rod for grout consolidation. Place subsequent lifts in 8 inch increments and rod for grout consolidation.
- I. High Lift Grouting:
  - 1. Provide cleanout opening no less than 4 inches high at the bottom of each cell to be grouted by cutting one face shell of masonry unit.
  - 2. Clean out masonry cells and cavities with high pressure water spray. Permit complete water drainage.
  - 3. Request the Engineer to inspect the cells and cavities. Allow 3 days advance notice of inspection.
  - 4. After cleaning and cell inspection, seal openings with masonry units.
  - 5. Pump grout into spaces. Maintain water content in grout to intended slump without aggregate segregation.
  - 6. Limit grout lift to 48 inches and rod for grout consolidation. Wait 30 to 60 minutes before placing next lift.

### 3.12 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control and expansion joints.
- B. When noted on drawings, form control joint with a sheet building paper bond breaker, fitted to one side of the hollow contour end of the block unit. Fill the resultant elliptical core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

- C. Where noted on drawings, install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- D. Size control joint in accordance with Section 07900 for sealant performance.
- E. Form expansion joint as detailed.

### 3.13 BUILT-IN WORK

- A. As work progresses, build in metal door and glazed frames, fabricated metal frames, window frames, anchor bolts, plates, electrical conduit and boxes, piping and other items furnished by other Sections.
- B. Build in items plumb and level.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build in organic materials subject to deterioration.

### 3.14 TOLERANCES

- A. Maximum Variation From Alignment of Columns and Pilasters: 1/4 inch.
- B. Maximum Variation From Unit to Adjacent Unit: 1/32 inch.
- C. Maximum Variation From Plane of Wall: 1/4 inch in 10 feet and 1/2 inch in 20 feet or more.
- D. Maximum Variation From Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation From Level Coursing: 1/8 inch in 3 feet and 1/4 inch in 10 feet; 1/2 inch in 30 feet.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet.
- G. Maximum Variation From Cross Sectional Thickness of Walls: 1/4 inch.

### 3.15 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves and grounds. Coordinate with other Sections of work to provide correct size, shape, and location.
- B. Obtain Architect approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### 3.16 CLEANING

- A. Clean work under provisions of Section 01700.
- B. Remove excess mortar and mortar smears.
- C. Replace defective mortar. Match adjacent work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

### 3.17 PROTECTION OF FINISHED WORK

- A. Protect finished installation under provisions of Section 01500.
- B. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

END OF SECTION

## SECTION 04730

### MANUFACTURED AND NATURAL STONE MASONRY VENEER

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes: Portland cement based manufactured stone veneer and trim.
- B. Related Sections:
  - 1. Section 07620 - Sheet Metal Flashing and Trim.
  - 2. Section 07900 - Joint Sealers

##### 1.2 SUBMITTALS

- A. Reference Section 01330 - Submittal Procedures: Submit following items:
  - 1. Product Data.
  - 2. Samples:
    - a. Standard sample board consisting of small-scale pieces of veneer units showing full range of textures and colors.
    - b. Full range of mortar colors.
  - 3. Verification Samples: Following initial sample selection submit "laid-up" sample board using the selected stone and mortar materials and showing the full range of colors expected in the finished Work; minimum sample size: 3 by 3 feet.
  - 4. Quality Assurance/Control Submittals:
    - a. Qualifications:
      - 1) Proof of manufacturer qualifications.
      - 2) Proof of installer qualifications.
    - b. Regulatory Requirements: Evaluation reports.
    - c. Veneer manufacturer's installation instructions.
    - d. Installation instructions for other materials.
- B. Closeout Submittals: Reference Section 01770-Closeout Procedures: submit following item:

1. Maintenance Instructions.
2. Special Warranties.

### 1.3 QUALITY ASSURANCE

#### A. QUALIFICATIONS:

1. Manufacturer Qualifications: Eldorado Stone, LLC.
2. Installer Qualifications: Experienced mason familiar with installation procedures and related local, state and federal codes masonry.

#### B. Field Sample:

1. Prepare 3 by 3 foot samples at a location on the structure as selected by the Engineer. Use approved selection sample materials and colors. Include details such as corners, trim, mortar joints and joint details abutting other materials.
2. Obtain Engineer's approval.
3. Protect and retain sample as a basis for approval of completed manufactured stone work. Approved sample may be incorporated into completed work.

### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Follow manufacturer's instructions.

### 1.5 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: When air temperature is 40 degrees F (4.5 degree C) or below, consult local building code for Cold-Weather Construction Requirements.

### 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard warranty coverage against defects in materials when installed in accordance with manufacturer's installation instructions.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. Eldorado Stone, LLC  
1370 Grand Ave., Bldg. B  
San Marcos, CA 92069

## 2.2 MATERIALS

- A. Stone Veneer:
  - 1. Profile: Mountain Ledge. Include matching corner pieces.
- B. Veneer Unit properties: Precast veneer units consisting of portland cement lightweight aggregates, and mineral oxide pigments.
  - 1. Compressive Strength: ASTM C 192 and ASTM C 39, 5 sample average: greater than 1,800 psi (12.4MPa).
  - 2. Shear Bond: ASTM C 482: 50 psi (345kPa), minimum.
  - 3. Freeze-Thaw Test: ASTM C 67: Less than 3 percent weight loss and no disintegration.
  - 4. Thermal Resistance: ASTM C 177: 0.473 at 1.387 inches thick.
  - 5. Weight per square foot: 2012 IBC and 2012 IRC, ASTM C1670, 15 pounds, saturated.
- C. Weather Barrier: ICC AC-38, synthetic house wrap.
- D. Reinforcing: ASTM C 847, 2.5lb/yd<sup>2</sup> (1.4kg/m<sup>2</sup>) galvanized expanded metal lath complying with code agency requirements for the type of substrate over which stone veneer is installed.
- E. Mortar:
  - 1. Cement: Portland cement complying with ASTM C 1329.
  - 2. Lime: ASTM C 207.
  - 3. Sand: ASTM C 144, natural or manufactured sand.
  - 4. Color Pigment: ASTM C 979, mineral oxide pigments.
  - 5. Water: Potable.
  - 6. Pre-Packaged Latex-Portland Cement Mortar: ANSI A 118.4.
- F. Bonding Agent: Exterior integral bonding agent meeting ASTM C932 or ASTM C 1059 Type II.
- G. Water Repellent: Water based silane or siloxane masonry water repellent.

## 2.3 MORTAR MIXES

- A. Standard Installation (Grouted Joints):

1. Mix mortar in accordance with ASTM C270,
2. Polymer modified mortar complying with ANSI A118.4
  - a. Add color pigment in grout joint mortar in accordance with pigment manufacturer's instructions not to exceed 10% by weight of cement.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates upon which work will be installed.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Commencement of work by installer is acceptance of substrate.

### 3.2 PREPARATION

- A. Protection: Protect adjacent work from contact with mortar.
- B. Surface Preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

### 3.3 INSTALLATION

- A. Install and clean stone in accordance with manufacturer's installation instructions for Standard Installation (Grouted Joint) or Jointless/Dry-Stacked installation as specified above.
- B. Apply repellent in accordance with repellent manufacturer's application instructions.

### 3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Manufacturer's Field Service Representative shall make two periodic site visits review of on-going installation process but is not responsible for any errors or omissions that are not observed or are previously completed.

### 3.5 CLEANING

- A. Remove protective coverings from adjacent work.
- B. Cleaning Veneer Units:
  1. Wash with soft bristle brush and water/granulated detergent solution.
  2. Rinse immediately with clean water.

C. Removing Efflorescence:

1. Allow veneer to dry thoroughly
2. Scrub with soft bristle brush and clean water
3. Rinse immediately with clean water; allow to dry
4. If efflorescence is still visible, contact ES Customer Service for assistance

END OF SECTION





## SECTION 06112

### FRAMING AND SHEATHING

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Structural roof framing.
- B. Wall framing.
- C. Wall roof sheathing.
- D. Preservative treatment of wood.
- E. Masonry sill plate.
- F. Sill gaskets.

##### 1.2 RELATED WORK

- A. Section 04300 - Unit Masonry System Setting anchors in masonry.
- B. Section 06114 - Wood Blocking and Curbing.

##### 1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.
- B. ANSI A135.4 - Basic Hardwood.
- C. ANSI A208.1 - Mat Formed Wood Particleboard.
- D. APA - American Plywood Association.
- E. AWPA - American Wood Preservers' Association: Book of Standards.
- F. FS - TT-W-571 - Wood Preservation: Treating Practices.
- G. NFPA - National Forest Products Association.
- H. RIS - Redwood Inspection Service: Standard Specifications for Grades of California Redwood Lumber.
- I. SFPA - Southern Forest Products Association.
- J. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.

K. WWPA - Western Wood Products Association.

#### 1..4 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

B. Plywood Grading Agency: Certified by APA.

#### 1..5 SUBMITTALS

A. Submit product data under provisions of Section 01300.

B. Provide technical data on wood preservative materials and application instructions.

C. In lieu of grade stamping exposed-to-view lumber and plywood, submit manufacturer's certificate under provisions of Section 01400 that products meet or exceed specified requirements.

#### 1..6 DELIVERY, STORAGE, AND HANDLING

A. Store and protect products under provisions of Section 01600.

### 2. PART 2 PRODUCTS

#### 2..1 LUMBER MATERIALS

A. Lumber Grading Rules: NFPA.

B. Joist Framing: Spruce Pine Fir species, No. 2 grade, 2 x size classification, 19 percent maximum moisture content.

C. Rafter Framing: Spruce Pine Fir species, No. 2 grade, 2 x size classification, 19 percent maximum moisture content.

D. Non-structural Light Framing: Spruce Pine Fir species, No. 2 grade, 2 x size classification, 19 percent maximum moisture content.

E. Studding, Blocking, Plates: Spruce Pine Fir species, No. 2 grade, 2 x size classification, 19 percent maximum moisture content.

F. Exterior Wall Framing: Southern (yellow) Pine, No. 2 grade.

#### 2..2 PLYWOOD MATERIALS

A. Roof Sheathing: APA Structural I, Grade C-D; Group I; Exp. 1; unsanded.

#### 2..3 PARTICLEBOARD MATERIALS

A. Wall Sheathing: ANSI A208.1; wood flakes set with waterproof resin binder; APA Rated sheathing; unsanded faces.

## 2..4 ACCESSORIES

- A. Fasteners: Hot-dipped galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- B. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or ballistic fasteners for anchorage to steel.
- C. Sill Gasket: 1/4 inch thick, plate width; closed cell foam from continuous rolls.
- D. Building Paper: Plain untreated cellulosic building paper.

## 2..5 WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWWA Treatment C2 using waterborne preservative with 0.40 percent retainage.

## 3. PART 3 EXECUTION

### 3..1 FRAMING

- A. Erect wood framing members level and plumb.
- B. Place horizontal members laid flat, crown side-up.
- C. Construct framing members full length without splices.
- D. Double members at openings over one sq ft. Space short studs over and under opening to stud spacing.
- E. Construct double joist headers at ceiling openings. Frame rigidly into joists.
- F. Bridge wall framing in excess of 8 feet span at 8' A.P.F. Fit solid bridging at ends of members.
- G. Place sill gasket directly on cementitious foundation. Puncture gasket, clean and fit tight to protruding foundation anchor bolts. Install treated wood sill plate over gasket and anchor bolts. Tighten and secure anchor bolts.

### 3..2 SHEATHING

- A. Secure floor and roof sheathing perpendicular to framing members with ends staggered. Secure sheet edges over firm bearing. Use sheathing clips between sheets between roof framing members. Provide solid edge blocking between sheets.
- B. Secure wall sheathing vertically perpendicular to wall studs, with ends staggered, over firm bearing.

- C. Install plywood with long dimension across supports and continuous over two or more spans.

### 3.3 TOLERANCES

- A. Framing Members: 1/4 inch maximum from true position.

END OF SECTION

## SECTION 06114

### WOOD BLOCKING AND CURBING

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Miscellaneous blocking.
- B. P.T. blocking and P.T. plywood at interior electric panels.

##### 1.2 REFERENCES

- A. ALSC - American Lumber Standards Committee: Softwood Lumber Standard.
- B. APA - American Plywood Association: Grades and Standards.
- C. FS TT-W-571 - Wood Preservation: Treating Practices.
- D. NFPA - National Forest Products Association.
- E. RIS - Redwood Inspection Service: Standard Specifications for Grades of California Redwood Lumber.
- F. SFPA - Southern Forest Products Association.
- G. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- H. WWPA - Western Wood Products Association.

##### 1.3 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified by ALSC.
- B. Plywood Grading Agency: Certified by APA.

##### 1.4 SUBMITTALS

- A. Submit product data under provisions of Section 01330.
- B. Provide technical data on wood preservative materials and application instructions.

#### 2. PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Lumber Grading Rules: NFPA.
- B. Softwood Lumber: Western Spruce species, No. 2 grade, 19 percent maximum moisture content.
- C. Plywood: APA Grade C-D, without waterproof glue, unsanded.
- D. Fasteners: Electro-galvanized steel for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- E. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolts or ballistic fasteners for anchorages to steel.

## 2.2 WOOD TREATMENT

- A. Wood preservative (Pressure Treatment): AWWA Treatment C2 using waterborne preservative with 0.30 percent retainage.

## 3. PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Erect wood framing members level and plumb.
- B. Coordinate work with installation of roofing and support of flashing.
- D. Secure wood blocking to masonry and other wood blocking with appropriately sized and quantity of fasteners.

END OF SECTION

## SECTION 06193

### PLATE CONNECTED WOOD TRUSSES

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Prefabricated wood trusses for roof framing.
- B. Bridging, bracing, and anchorage.

##### 1.2 RELATED WORK

- A. Section 06112 - Framing and Sheathing: Roof sheathing.
- B. Section 06114 - Wood Blocking and Curbing.

##### 1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.
- B. ASTM A167 - Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- C. ANSI/ASTM A446 - Sheet Steel, Zinc Coated (Galvanized) by the Hot-Dip Process, Physical (Structural) Quality.
- D. AWWA - American Wood Preservers' Association.
- E. FS TT-W-571 - Wood Preservation: Treating Practices.
- F. NFPA - National Forest Products Association.
- G. RIS - Redwood Inspection Service: Standard Specifications and Grades for California Redwood Lumber.
- H. SFPA - Southern Forest Products Association.
- I. TPI - Truss Plate Institute.
- J. UL - Underwriters' Laboratories, Inc.
- K. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.
- L. WWPA - Western Wood Products Association.

##### 1.4 SYSTEM DESCRIPTION



- A. Design Roof Live Load: 30 lbs/sq ft ( KPa) with live load deflection limited to Span /360.

#### 1..5 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacture of prefabricated wood trusses with three years minimum experience.
- B. Design trusses under direct supervision of Professional Engineer experienced in structural framing design of trusses registered in Commonwealth of Pennsylvania
- C. Lumber Grading Agency: Certified by ALSC.
- D. Truss Plates: In accordance with Truss Plate Institute.

#### 1..6 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Indicate framing system, sizes and spacing of joists, loads and joist cambers, bearing and anchor details, bridging and bracing, framed openings, and Submit design calculations.

#### 1..7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 06100.
- B. Store and protect products under provisions of Section 06100.
- C. Transport and store trusses in vertical position resting on bearing ends.
- D. Protect trusses from moisture, warpage, and distortion during transit and when stored.

### 2. PART 2 PRODUCTS

#### 2..1 MATERIALS

- A. Lumber Grading Rules: NFPA.
- B. Steel Connectors: ANSI/ASTM A446 steel, Grade A; galvanized; minimum .036 inch thick.
- C. Steel Connectors: ASTM A167, Type 304 stainless steel.
- D. Fasteners: Galvanized for exterior, high humidity, and treated wood locations; plain finish elsewhere; size and type to suit condition.
- E. Bearing Plate Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to hold masonry or concrete. Bolts or ballistic fasteners for anchorages to steel.

- F. Wood Blocking: In accordance with Section 06114.

## 2..2 FABRICATION

- A. Verify dimensions and site conditions prior to fabrication.
- B. Cut members accurately to length to achieve tight joint connections.
- C. Jig trusses during fabrication to assure accurate configuration. Press connectors into lumber, both sides of joint simultaneously.
- D. Build camber into truss.

## 3. PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that supports and openings are ready to receive trusses.
- B. Verify sufficient end bearing area.
- C. Beginning of installation means acceptance of existing conditions.

### 3.2 PREPARATION

- A. Coordinate placement of bearing support items.

### 3..3 INSTALLATION

- A. Install trusses in accordance with manufacturer's instructions, at a spacing of 24 inches oc.
- B. Place trusses true to line and level.
- C. Provide temporary bracing to hold trusses in place until permanently secured.
- D. Place permanent bridging, bracing, and anchors to maintain trusses straight and in correct position before inducing loads in accordance with TPI-(BWT-76).
- E. Do not field cut trusses.
- F. Place headers and supports to frame openings required.
- G. Frame openings between trusses with lumber in accordance with Section 06114.
- H. Coordinate placement of sheathing with work of this Section.

### 3.4 TOLERANCES

A. Framing Members: 1/2 inch maximum from true position.

END OF SECTION

## SECTION 06411

### PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:

- 1. Plastic-laminate-faced architectural cabinets.
- 2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

- B. Related Requirements:

- 1. Section 06100 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.

##### 1.3 PREINSTALLATION MEETINGS

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

##### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product, including panel products, high-pressure decorative laminate adhesive for bonding plastic laminate, and cabinet hardware and accessories.

- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

- 1. Show details full size.
- 2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
- 3. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural plastic-laminate cabinets.
- 4. Apply AWI Quality Certification Program label to Shop Drawings.

- C. Samples for Initial Selection:

1. Plastic laminates.
2. PVC edge material.
3. Thermoset decorative panels.

D. Samples for Verification:

1. Plastic laminates, 12 by 12 inches, for each type, color, pattern, and surface finish, with one sample applied to core material and specified edge material applied to one edge.
2. Corner pieces as follows:
  - a. Cabinet-front frame joints between stiles and rails, as well as exposed end pieces, 18 inches high by 18 inches wide by 6 inches deep.
  - b. Miter joints for standing trim.
3. Exposed cabinet hardware and accessories, one unit for each type and finish.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Product Certificates: For each type of product. The following:
  1. Composite wood and agrifiber products.
  2. Thermoset decorative panels.
  3. High-pressure decorative laminate.
  4. Glass.
  5. Adhesives.
- C. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.
- D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

## 1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance. Shop is a certified participant in AWI's Quality Certification Program.
- B. Installer Qualifications: Certified participant in AWI's Quality Certification Program.
- C. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.
- D. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  1. Build mockups of typical plastic-laminate cabinets as shown on Drawings.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

#### 1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.
- C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.
- D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

#### 1.9 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that cabinets can be supported and installed as indicated.
- B. Hardware Coordination: Coordinate Shop Drawings and fabrication with hardware requirements.

### PART 2 - PRODUCTS

#### 2.1 ARCHITECTURAL CABINET FABRICATORS

- A. Fabricators: Subject to compliance with AWI Certification requirements.

## 2.2 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.
1. Provide labels and certificates from AWI certification program indicating that woodwork, including installation, complies with requirements of grades specified.
  2. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.
- B. Grade: Premium.
- C. Type of Construction: Frameless.
- D. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.
- E. Reveal Dimension: 1/2 inch.
- F. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Formica Corporation.
    - b. Wilsonart International; Div. of Premark International, Inc.
    - c. Nevermar
- G. Laminate Cladding for Exposed Surfaces:
1. Horizontal Surfaces: Grade HGS.
  2. Postformed Surfaces: Grade HGP.
  3. Vertical Surfaces: Grade HGS.
  4. Edges: Grade HGS. Matching laminate in color, pattern, and finish.
  5. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts.
- H. Materials for Semiexposed Surfaces:
1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.
    - a. Edges of Plastic-Laminate Shelves: 0.12 inch thick, matching laminate in color, pattern, and finish.
    - b. Edges of Thermoset Decorative Panel Shelves: Polyester edge banding.
    - c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
  2. Drawer Sides and Backs: Solid-hardwood lumber or polyester edge banding.
  3. Drawer Bottoms: Hardwood plywood.

- I. Dust Panels: 1/4-inch plywood or tempered hardboard above compartments and drawers unless located directly under tops.
- J. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.
- K. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
  - 1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners glued dovetail joints.
- L. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
  - 1. As selected by Architect from laminate manufacturer's full range in the following categories:
    - a. Solid colors, matte finish.
    - b. Solid colors with core same color as surface, matte finish.
    - c. Wood grains, matte finish.
    - d. Patterns, matte.

### 2.3 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
  - 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
  - 1. Composite Wood and Agrifiber Products: Products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
  - 2. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
  - 3. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde.
  - 4. Particleboard: Straw-based particleboard complying with requirements in ANSI A208.1, Grade M-2, except for density.
  - 5. Softwood Plywood: DOC PS 1, medium-density overlay.
  - 6. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.
  - 7. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.



## 2.4 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087111 "Door Hardware (Descriptive Specification)."
- B. Butt Hinges: 2-3/4-inch, five-knuckle steel hinges made from 0.095-inch thick metal, and as follows:
  - 1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
  - 2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.
- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 100 degrees of opening, self-closing.
- D. Back-Mounted Pulls: BHMA A156.9, B02011.
- E. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.
- F. Catches: Magnetic catches, BHMA A156.9, B03141 Push-in magnetic catches, BHMA A156.9, B03131.
- G. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- H. Shelf Rests: BHMA A156.9, B04013; metal.
- I. Drawer Slides: BHMA A156.9.
  - 1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer; full-extension type; zinc-plated steel with polymer rollers.
  - 2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
  - 3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
  - 4. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
  - 5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-100.
  - 6. For computer keyboard shelves, provide Grade 1.
  - 7. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-100.
- J. Aluminum Slides for Sliding Glass Doors: BHMA A156.9, B07063.
- K. Door Locks: BHMA A156.11, E07121.
- L. Drawer Locks: BHMA A156.11, E07041.
- M. Door and Drawer Silencers: BHMA A156.16, L03011.
- N. Float Glass for Cabinet Doors: ASTM C 1036, Type I, Class 1 clear, Quality-Q3, 5.0 mm thick.

- O. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
  - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
- P. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

## 2.5 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood, kiln dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesives: Do not use adhesives that contain urea formaldehyde.
- D. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- E. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
  - 1. Adhesive for Bonding Edges: Adhesive specified above for faces.

## 2.6 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate cabinets to dimensions, profiles, and details indicated.
- C. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
  - 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
  - 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- D. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to

produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

- E. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.
- B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required.

### 3.2 INSTALLATION

- A. Grade: Install cabinets to comply with same grade as item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.
- C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing screws for exposed fastening, countersunk and filled flush with woodwork.
  - 1. Use filler matching finish of items being installed.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
  - 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
  - 2. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips or No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION 06411



## SECTION 07190

### AIR INFILTRATION BARRIERS

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Sheet material to provide a continuous air barrier throughout the building envelope and to seal wall air barrier to window and door frame openings.

##### 1.2 REFERENCES

- A. ASTM A361 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- B. ANSI/ASTM D491 - Asphalt Mastic Used on Waterproofing.
- C. ASTM C804 - Recommended Practice for Use of Solvent-Release Type Sealant.
- D. FS TT-S-001657 - Sealing Compound, Single Component, Butyl Rubber Based, Solvent Release Type.
- E. FS TT-S-00230 - Sealing Compounds, Synthetic-Rubber Base, Single Component, Chemically Curing.
- F. Sealant and Waterproofer's Institute - Sealant and Caulking Guide Specification.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Materials of this Section shall provide continuity of building enclosure vapor and air barrier:
  - 1. To seal gaps between building enclosure components and wall opening frames.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data indicating material characteristics, performance criteria and limitations.
- C. Manufacturer's Installation Instructions: Indicate preparation and installation requirements and techniques.

##### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Sealant and Waterproofer's Institute - Sealant and Calking Guide Specification requirements for materials and installation.
- B. Maintain one copy of document on site.

#### 1..6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install solvent curing sealants in enclosed building spaces without ventilation.
- B. Maintain temperature and humidity recommended by the materials manufacturers before, during, and after installation.

### 2. PART 2 PRODUCTS

#### 2..1 SHEET MATERIALS

- A. Sheet Barrier Tyvek manufactured by DuPont Company or approved equal.

### 3. PART 3 EXECUTION

#### 3..1 EXAMINATION

- A. Verify condition of substrate and adjacent materials.
- B. Verify that surfaces and conditions are ready to accept the Work.

#### 3..2 PREPARATION

- A. Remove loose or foreign matter which might impair installation.

#### 3..3 INSTALLATION

- A. Install sheet materials in accordance with manufacturer's instructions.

#### 3..4 PROTECTION OF FINISHED WORK

- A. Protect finished Work as per Manufacturers' recommendation.
- B. Do not permit adjacent Work to damage Work of this Section.

END OF SECTION

## SECTION 07212

### BOARD INSULATION

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Board insulation at perimeter foundation wall.

##### 1.2 RELATED SECTIONS

- A. Section 04330 - Unit Masonry.

##### 1.3 REFERENCES

- A. ANSI/ASTM D2842 - Water Absorption of Rigid Cellular Plastics.
- B. ASTM C240 - Testing Cellular Glass Insulating Block.
- C. ASTM C578 - Preformed Cellular Polystyrene Thermal Insulation.
- D. ASTM E96 - Test Methods for Water Vapor Transmission of Materials.
- E. FS HH-I-530 - Insulation Board, Thermal, Unfaced, Polyurethane or Polyisocyanurate.
- F. FS HH-I-551 - Insulation Block and Boards, Thermal (Cellular Glass).
- G. FS HH-I-1972/GEN - Insulation Board, Thermal, Faced, Polyurethane or Polyisocyanurate.

##### 1.4 PERFORMANCE REQUIREMENTS

- A. Materials of this Section shall provide continuity of thermal barrier at building enclosure elements.

##### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on product characteristics, performance criteria, and limitations.
- C. Manufacturer's Installation Instructions: Indicate special environmental conditions required for installation and installation techniques.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

##### 1.6 ENVIRONMENTAL REQUIREMENTS



- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

## 2. PART 2 PRODUCTS

### 2..1 MANUFACTURER - INSULATION MATERIALS

- A. Dow Chemical Company - Product Styrofoam Brand Insulation.

### 2..2 INSULATION MATERIALS

- A. Polystyrene Insulation Type A: Extruded cellular type, conforming to the following:

Thermal Resistance	R of 5.0 per inch thickness
Thickness	Thickness indicated
Compressive Strength	Minimum 40
Water Absorption	In accordance with ANSI/ASTM D2842 0.3 percent by volume maximum
Style	Square Edge

## 3. PART 3 EXECUTION

### 3..1 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.
- B. Verify substrate surface is flat and free of materials or substances that may impede adhesive bond.

### 3..2 INSTALLATION - FOUNDATION PERIMETER

- A. Adhere boards to foundation wall. Place boards in a method to maximize contact bedding. Stagger joints. Butt edges and ends tight to adjacent board and to protrusions.

### 3..3 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500
- B. Do not permit Work to be damaged prior to covering insulation.

### 3..4 SCHEDULES

- A. Perimeter Insulation - Type A, extruded polystyrene.

END OF SECTION

## SECTION 07213

### BATT AND BLANKET INSULATION

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Batt insulation for in exterior wall.
- B. Sound batt insulation in interior walls where shown on drawings.
- C. Batt insulation above ceilings where shown on drawings.

##### 1.2 REFERENCES

- A. ASTM C665 - Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- B. FS HH-I-558 - Insulation, Blocks, Boards, Blankets, Felts, Sleeving (Pipe and Tube Covering), and Pipe Fitting Covering, Thermal (Mineral Fiber, Industrial Type).

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Materials of this Section shall provide continuity of thermal barrier at building enclosure elements.
- B. Materials of this Section shall provide continuity of vapor and air barrier at building enclosure elements.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide data on product characteristics, performance criteria and limitations.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

#### 2. PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Batt Insulation: FS HH-I-521 Type I - without membranes and Type II - with non-reflective membrane one side ASTM C665; preformed glass fiber batt and roll; friction fit, conforming to the following:

Thermal Resistance	See Plan
Size	As Required
Facing	Unfaced and Faced on one side with foil faced aluminum at exterior walls.

- B. Sound Batt Insulation: ASTM C665 Type I, unfaced with size as noted on drawings.
- C. Staples: Steel wire; electroplated; type and size to suit application where required.
- D. Tape: Polyester self-adhering type, mesh reinforced, 2 inch wide.

### 3. PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify site conditions.
- B. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.

#### 3.2 INSTALLATION

- A. Install insulation accordance with manufacturer's instructions.
- B. Install above ceiling spaces where noted without gaps or voids.
- C. Trim insulation neatly to fit spaces.
- D. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation. Leave no gaps or voids.
- E. Install with factory applied membrane facing warm side of building spaces. Lap ends and side flanges of membrane over framing members.

END OF SECTION

SECTION 07464  
CEMENT BOARD SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Factory-finished fiber cement lap siding, trim, fascia, and accessories.

1.2 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

- A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years' experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.

3. Remodel mock-up area as required to produce acceptable work.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.8 WARRANTY

- A. Product Warranty: Limited, non-pro-rated product warranty.
  1. Lap siding for 30 years.
  2. Trim boards for 15 years.
- B. Finish Warranty: Limited product warranty against manufacturing finish defects.
  1. When used for its intended purpose, properly installed and maintained according to published installation instructions, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.
- C. Workmanship Warranty: Application limited warranty for 2 years.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 231 S. La Salle St. Suite 2000; Chicago, IL 60604; Toll Free Tel: 877-236-7526;
- B. Substitutions: Approved equal.
- C. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01600 - Product Requirements.

### 2.2 SIDING AND TRIM

- A. Lap siding, requirement for materials:
  1. Fiber-cement siding - complies with ASTM C 1186 Type A Grade II.
  2. Fiber-cement siding - complies with ASTM E 136 as a noncombustible material.
  3. Fiber-cement siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
  4. ICC-ES evaluation reports ESR-2290, ESR-1844, and ESR-2273 (IBC, IRC, CBC, CRC).
  5. Manufacturer's Technical Data Sheet.

- B. Lap Siding: Artisan HZ10 Lap Siding as manufactured by James Hardie Building Products, Inc.
1. Type: Texture 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.\*\* NOTE TO SPECIFIER \*\* Available in 12 foot lengths, width as indicated. Delete if not required.
  2. Fire Characteristics:
    - a. Tested in Accordance with ASTM E136: Classified as non-combustible.
    - b. May be used in ASTM E119 fire resistance rated assemblies as listed by Warnock Hersey.
    - c. Class A Material: Per FBC 2017 and 2020, and 2018 IBC Section 803.1.1 Surface Burning Characteristics when tested in accordance with ASTM E84:
      - 1) Flame Spread Index : 0. Smoke Developed Index: 0.
  3. Trim Accessories:
    - a. J Trim: Aluminum extrusion to be used as a trim at abutments; soffits, masonry, windows, etc.
    - b. Low-Profile Inside Corner Trim: Aluminum extrusion to be used for inside corners.
    - c. Inside Corner Trim: Aluminum extrusion to be used for inside corners.
    - d. Low-Profile Outside Corner Trim: Aluminum extrusion to be used for outside corners.
    - e. Low Profile 45 degrees Inside Corner Trim: Aluminum extrusion to be used for bay windows.
    - f. Low Profile 45 degrees Outside Corner Trim: Aluminum extrusion to be used for bay windows.
    - g. Vertical T Trim: Aluminum extrusion to be used along vertical butt joints. For horizontal panel orientations only.
    - h. Vertical H Trim: Aluminum extrusion to be used along vertical butt joints. For horizontal panel orientations only.
    - i. Horizontal Angled T Flashing Trim: Aluminum extrusion to be used along horizontal control joints.
    - j. Horizontal Z Flashing Trim: Aluminum extrusion to be used along horizontal control joints.
    - k. Base Trim: Aluminum extrusion to be used as a base edge solution.
    - l. Base Outside Corner Trim: To be used as an outside corner connection for Base trim.
    - m. Base Inside Corner Trim: To be used as an inside corner connection for Base trim.
    - n. Base Jointer: To be used to connect Base trims.
    - o. HardieTrim Boards: Fiber cement trim for corners and windows. Can be mounted horizontally or vertically.
- C. Trim:
1. Trim boards.
    - a. .
    - b. Product: Boards, 3-1/2 inch (89 mm) width.
    - c. Texture: Wood Grained.
    - d. Length: 12 feet (3658 mm).
    - e. Thickness: 3/4 inch (19 mm).
  2. Fascia boards to match trim.

3. Fiber-cement trim - complies with ASTM C 1186 Type A Grade II.
  4. Fiber-cement trim - complies with ASTM E 136 as a noncombustible material.
  5. Fiber-cement trim - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
- D. Wood Framing Fasteners:
1. Wood Framing corrosion resistant nails.

## 2.3 FINISHES

- A. Factory Primer: Provide factory applied universal primer.
1. Topcoat: Refer to Section 09900 - Painting and Coating and Exterior Finish Schedule.
- B. Factory Finish:
1. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
  2. Process:
    - a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
    - b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.
  3. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
  4. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.
- C. Factory Finish Color for Trim, Soffit and Siding Colors: To be selected from standard colors by Architect.

## PART 3 EXECUTION

### 3.1 EXAMINATION IMPORT "[http://www.arcat.com/gfx/csi\\_revision\\_21b.gif](http://www.arcat.com/gfx/csi_revision_21b.gif)" \* MERGEFORMAT \

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
1. Install water-resistive barriers and claddings to dry surfaces.
  2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
  3. Protect siding from other trades.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install manufacturer's approved weather barrier in accordance with local building code requirements.
- F. Use Manufacturer's approved Seam Tape and joint and laps.
- G. Install and manufacturer's approved flashing.

### 3.3 INSTALLATION

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the planks over framing members.
- E. Butt joints must not fall within 4 inches (102 mm) of a stud. Do not nail within 2 inches (51 mm) of the end of planks.
- F. Maintain clearance between siding and adjacent finished grade.
- G. Locate splices at least one stud cavity away from window and door openings.
- H. For proper fastener selection and fastening schedules for various wind load requirements and framing options, refer to the Technical Data Sheet at [www.aspyredesign.com](http://www.aspyredesign.com).
- I. Face nail to sheathing.
- J. Locate splices at least 12 inches (305 mm) away from window and door openings.
  - 1. Fastener heads should fit snug against siding; no air space.

### 3.4 INSTALLATION - TRIM BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.



- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E. Trim inside corner with a single board trim both side of corner.
- F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with high quality, paint-able caulk.
- I. Shim frieze board as required to align with corner trim..
- J. Fasten through overlapping boards. Do not nail between lap joints.
- K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten Trim boards to Trim boards.
- L. Shim frieze board as required to align with corner trim.
- M. Install Trim Fascia boards to rafter tails or to sub fascia.

### 3.5 FINISHING

- A. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

### 3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

## SECTION 07611

### CUSTOM SHEET METAL ROOFING

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes pre-finished galvanized sheet steel roofing, wall panels, soffits, associated flashings, insulation and underlayment.
  - 1. Provide gutters, snow guards, fascias and counterflashings.
- B. Related Sections:
  - 1. Section 06112 - Rough Framing and Sheathing: Plywood roof deck substrate.
  - 2. Section 06114 - Wood Blocking and Curbing: Wood blocking and battens for metal roofing substrate profiles.
  - 3. Section 07620 - Sheet Metal Flashing and Trim.
  - 4. Section 07631 - Gutters and Downspouts.
  - 5. Section 07900 - Joint Sealers.

##### 1.2 REFERENCES

- A. AAMA 603.8 (American Architectural Manufacturers Association) - Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.
- B. AAMA 605.2 (American Architectural Manufacturers Association) - Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
- C. AAMA 611 (American Architectural Manufacturers Association) - Standards for Anodized Architectural Aluminum.
- D. ASTM A653/A653M - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated by the Hot-Dip Process.
- E. ASTM A666 - Austenitic Stainless steel Sheet, Strip, Plate, and Flat Bar.
- F. ASTM A924/A924M - Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot-Dip Process, Structural (Physical) Quality.
- G. ASTM B32 - Specification for Solder Metal.
- H. ASTM B101 - Specification for Lead-Coated Copper Sheet and Strip for Building Construction.

- I. ASTM B209/B209M - Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- J. ASTM B370 - Specification for Copper Sheet and Strip for Building Construction.
- K. ASTM B749 - Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
- L. ASTM D226 - Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- M. ASTM D2178 - Specification for Asphalt Glass (Felt) Used in Roofing and Waterproofing.
- N. ASTM D4397 - Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- O. ASTM D4586 - Specification for Asphalt Roof Cement, Asbestos Free.
- P. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- Q. SMACNA (Sheet Metal and Air Conditioning Contractors National Association) - Architectural Sheet Metal Manual.

### 1.3 SUBMITTALS

- A. Section 01300 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Submit data on metal types, finishes, and characteristics.
- D. Samples:
  - 1. Submit samples 2x2 inch in size illustrating metal finish color.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA Architectural Sheet Metal Manual and standard details, except as otherwise noted.

### 1.5 QUALIFICATIONS

- A. Fabricator and Installer: Company specializing in sheet metal roof installations with minimum three years documented experience.

## 1.6 PRE-INSTALLATION MEETING

- A. Section 01300 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing Work of this section.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01600 - Product Requirements: Product storage and handling requirements.
- B. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials causing discoloration or staining.

## 1.8 COORDINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Coordinate with Work of Section 04810 for installing recessed flashing reglets.

## 1.9 WARRANTY

- A. Section 01700 - Execution Requirements: Product warranties and product bonds.
- B. Furnish five year manufacturer warranty for custom sheet metal roofing.

## PART 2 PRODUCTS

### 2.1 CUSTOM SHEET METAL ROOFING

- A. Pre-Finished Galvanized Steel Sheet: ASTM A924/A924M, Grade A, or ASTM A653/A653M, G90 (Z275) zinc coating; 24 gage core steel, shop pre-coated with Kynar 500 coating on top side and polyester wash coat on underside. Color as selected from manufacturer's standard color as selected by Engineer.
- B. Roof Panel System - Everlast Roofing, Inc, Everseam metal panels with concealed fastener clip system or approved equal..
- C. Soffit and Fascia Panel System - Materials to match roofing system..

### 2.2 ACCESSORIES

- A. Fasteners: Galvanized steel. Same material and finish as roofing metal with soft neoprene washers.
- B. Underlayment: Owens Corning Titanium PSU30 self adhered, HT or approved equal.
- C. Flashing, trim, gutter and downspouts.

- D. Primer: Zinc molybdate type.
- E. Protective Backing Panel: Zinc molybdate alkyd.
- F. Sealant: As specified in Section 07900.
- G. Plastic Cement: ASTM D4586, Type I.
- H. Eave and Valley Protection Sheet: Rubberized asphalt bonded to sheet polyethylene, 40 mil total thickness, with strippable treated release paper.
- I. Reglets: Recessed type, galvanized steel.
- J. Bearing Plates.

### 2.3 FABRICATION

- A. Form sections shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, to interlock with sheet.
- C. Fabricate starter strips of same material as sheet, continuous, to interlock with sheet.
- D. Form pieces in single length sheets.
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with standing flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate snow guards in accordance with SMACNA.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to eaves.
- C. Verify deck is dry and free of snow and ice. Verify joints in wood deck are solidly supported and fastened.
- D. Verify correct placement of wood nailers and insulation positioning between nailers.

- E. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.
- F. Verify roofing termination and base flashings are in place, sealed, and secure.

### 3.2 PREPARATION

- A. Fill knot holes and surface cracks with latex filler at areas of bonded eave protection.
- B. Broom clean deck surfaces under eave protection and underlayment.
- C. Install starter and edge strips, and cleats before starting installation.
- D. Install surface mounted reglets to lines and levels indicated on Drawings. Seal top of reglets with sealant.
- E. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to minimum dry film thickness of 15 mi.

### 3.3 INSTALLATION

- A. Eave Ice Dam Protection: Place eave edge, valley and gable edge metal flashings tight with fascia boards. Weather lap joints 2 inches and seal with plastic cement. Secure flange with nails.
  - 1. Apply eave protection sheet.
  - 2. Extend eave protection sheet minimum 2 feet up slope.
- B. General Roofing Installation Requirements:
  - 1. Apply underlayment over entire roof area in single layer laid perpendicular to slope; weather lap edges 2 inches and nail in place. Minimize nail quantity.
  - 2. Cleat and seam joints.
  - 3. Use plastic cement for joints between metal and bitumen and for joints between metal and felts.
  - 4. Install snow guards up slope from eaves.
- C. Standing Seam Roofing Installation:
  - 1. Conform to SMACNA details and manufacturer's UL requirements.
- D. Built-In Gutters And Downspouts Installation.
  - 1. Conform to SMACNA details.
- E. Wall Panel Installation.
  - 1. Conform to SMACNA details and manufacturer's requirements.

F. Flashing Installation:

1. Install reglets in accordance with Section 04810.
2. Conform to SMACNA details.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Execution Requirements: Protecting installed construction.
- B. Do not permit traffic over unprotected roof surface.

END OF SECTION

## SECTION 07620

### SHEET METAL FLASHING AND TRIM

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Metal Fascia.
- B. Metal Coping.
- C. Metal Gravel Stop.

##### 1.2 RELATED WORK

- A. Section 06114: Wood blocking, nailers, and grounds.
- B. Section 07531: Elastomeric Sheet Roofing.
- C. Section 07410: Gutters and Downspouts.

##### 1.3 REFERENCES

- A. AA (Aluminum Association) - Aluminum Construction Manual: Aluminum Sheet Metal Work and Building Construction.
- B. AISI (American Iron and Steel Institute) - Stainless Steel - Uses in Architecture.
- C. ANSI/ASTM B32 - Solder Metal.
- D. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate.
- E. ASTM A525 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process.
- F. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.
- G. ASTM B370 - Copper Sheet and Strip for Building Construction.
- H. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- I. CDA (Copper Development Association) - Contemporary Copper, A Handbook of Sheet Copper Fundamentals, Design, Details and Specifications.
- J. CDA - Copper Roofing - A Practical Handbook.
- K. FS O-F-506 - Flux, Soldering, Paste and Liquid.
- L. FS QQ-S-571 - Solder, Tin Alloy.



- M. FS QQ-T-201 - Terne Plate, for Roofing and Roofing Products.
- N. FS SS-C-153 - Cement, Bituminous, Plastic.
- O. NAAMM - Metal Finishes Handbook.
- P. NRCA (National Roofing Contractors Association) - Roofing Manual.
- Q. SMACNA - Architectural Sheet Metal Manual.

#### 1..4 SYSTEM DESCRIPTION

- A. Work of this Section is to physically protect base flashings, from damage that would permit water leakage to building interior.

#### 1..5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Describe material profile, jointing pattern, jointing details, fastening methods, and installation details.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.
- D. Submit samples under provisions of Section 01300.

#### 1..6 STORAGE AND HANDLING

- A. Store products under provisions of Section 01600.
- B. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation.
- C. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

### 2. PART 2 PRODUCTS

#### 2..1 MANUFACTURER

- A. Acceptable Manufacturer: Metal Era, Inc. or approved equal.

#### 2..2 SHEET MATERIALS

- A. Aluminum Sheet: ASTM B209; .040 inch thick; shop pre-coated with coating Kyner 500 standard of selected color by Engineer.

#### 2..3 ACCESSORIES

- A. Fastener: Stainless steel with soft neoprene washers at exposed fasteners. Finish exposed

fasteners same as flashing metal.

- B. Protective Backing Paint: Bituminous.
- C. Attic Vents: Linear type of aluminum sheet metal, formed to permit installation with shingle roofing and shed water.

#### 2.4 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats and starter strips of same material as sheet, minimum 6 inches wide, interlockable with sheet.
- C. Form pieces in longest practical lengths.
- D. Hem exposed edges on underside 1/2 inch (13 mm); miter and seam corners.
- E. Form material with flat lock seam.
- F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch (6 mm) and hemmed to form drip.
- H. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.

### 3. PART 3 EXECUTION

#### 3.1 INSPECTION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
- B. Verify membrane termination and base flashings are in place, sealed, and secure.
- C. Beginning of installation means acceptance of existing conditions.

#### 3.2 PREPARATION

- A. Field measure site conditions prior to fabricating work.
- B. Install starter and edge strips, and cleats before starting installation.
- C. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Engineer.
- D. Lock and seal all joints.

E. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

F. Seal metal joints watertight.

### 3.3 INSTALLATION

A. Conform to drawing details included in NRCA manual.

END OF SECTION

## SECTION 07631

### GUTTERS AND DOWNSPOUTS

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Gutters and downspouts.

##### 1.2 RELATED SECTIONS

- A. Section 07531: Elastomeric Sheet Roofing & Flashing

##### 1.3 REFERENCES

- A. ANSI/ASTM A446 - Steel Sheet, Zinc Coated, (Galvanized) by the Hot-Dip Process, structural (Physical) Quality.
- B. ANSI/ASTM B32 - Solder Metal.
- C. ASTM A167 - Stainless and Heat-Resisting, Chromium-Nickel Steel Plate, Sheet, and Strip.
- D. ASTM A525 - General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- E. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.
- F. ASTM B370 - Copper Sheet and Strip for Building Construction.
- G. FS O-F-506 - Flux, Soldering, Paste and Liquid.
- H. FS QQ-S-571 - Solder, Tin Alloy, Tin-Lead Alloy, and Lead Alloy.
- I. FS QQ-T-201 - Terne Plate, for Roofing and Roofing Products.
- J. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- K. SMACNA - Architectural Sheet Metal Manual.

##### 1.4 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Indicate on shop drawings, general construction, configurations, jointing methods and locations, fastening methods, locations, and installation details.
- C. Provide product data on prefabricated components.

- D. Submit manufacturer's installation instructions under provisions of Section 01300.

#### 1..5 QUALITY ASSURANCE

- A. Conform to SMACNA Manual Drawings for nominal sizing of components for rainfall intensity determined by a storm occurrence of 1 in 10 years.

#### 1..6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to aid ventilation. Slope to drain.
- D. Prevent contact with materials during storage which may cause discoloration, staining, or damage.

### 2. PART 2 PRODUCTS

#### 2..1 MANUFACTURER

- A. Metal-Era, Inc.  
1600 Airport Road  
Waukesha, WI 53188  
1-262-549-6900  
Fax: 1-262-549-6009  
Innernet address: [www.metalera.com](http://www.metalera.com)

#### 2..2 ROOF EDGING SYSTEM

- A. Seal-Tite Gutter System: IG-2 Profile
- B. Performance Characteristics:
  - 1. Heavy gauge gutter straps securely support large volumes of water, as well as extreme snow and icing conditions.
  - 2. Manufactured to rigid tolerances and furnished per required drainage capacity/size.
  - 3. Adapts easily to "optional" drainage bars or flow through gravel stops.
- C. Gutter metal gauge: 24 gauge galvanized steel with Kynar 500 finish.
- D. Gutter: standard 12'-0" (3.65m) lengths.
- E. Exterior gutter finishes: Kynar 500 from manufacturer's standard colors.

#### 2..3 ACCESSORIES

- A. Corners, end caps, expansion joints or exterior brackets shall e fabricated by manufacturer.

Factory fabricated, mitered corners shall have 17-1/2" nominal leg lengths.

- B. Provide matching ledge caps, downspouts, or other special fabrications as detailed.

#### 2..4 FABRICATION

- A. Form gutters and downspouts of profiles and size indicated.
- B. Field measure site conditions prior to fabricating work.
- C. Fabricate with required connection pieces.
- D. Form sections square, true, and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- E. Hem exposed edges of metal.
- F. Seal metal joints.
- G. Fabricate gutter and downspout accessories; seal watertight.

#### 2..5 SHOP FINISHING

- A. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

### 3. PART 3 EXECUTION

#### 3..1 EXAMINATION

- A. Verify that surfaces are ready to receive work and conditions are as instructed by the manufacturer.
- B. Beginning of installation means acceptance of existing conditions.

#### 3..2 INSTALLATION

- A. Install gravel stop, scupper, and accessories in accordance with manufacturer's instructions.
- B. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions. Gutter and drain shall be screwed into fascia at 24" os.
- C. Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.
- D. Apply backing paint to metal back surfaces.
- E. Apply bituminous protective backing on surfaces in contact with dissimilar materials.

- F. Seal metal joints watertight.
- G. Slope gutters 1/16 inch per foot minimum.

END OF SECTION

## SECTION 07900

### JOINT SEALERS

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. Work included: Throughout the Work, seal and caulk joints where shown on the Drawings and elsewhere as required to provide a positive barrier against passage of moisture and passage of air.

##### 1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

##### 1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
- B. Product data:
  - 1. Materials list of items proposed to be provided under this Section;
  - 2. Manufacturer's Specifications and other data needed to prove compliance with the specified requirements;
  - 3. Manufacturer's recommended installation procedures which, when approved by the Engineer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

##### 1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01600.
- B. Do not retain at the job site material which has exceeded the shelf life recommended by its manufacturer.

#### PART 2 - PRODUCTS

##### 2.1 SEALANTS

- A. Provide the following materials manufactured by Sonneborn Building Products, or equals approved in advance by the Engineer, where indicated and where otherwise required for a complete and proper installation.



Material:

Location of use:

1. Dow Corning 795  
Silicone Building Sealant

EIFS panels at perimeter, joints and aluminum windows, walls, and existing door assembly and glazing.

2. Sonolastic NP I

Throughout the Work, except where other sealant is specified, where anticipated joint movement will be 25% or less;

3. Sonolastic NP II

Throughout the Work, except where other sealant is specified, where anticipated joint movement will be 50% or less;

4. Sonolastic Paving Joint  
Sealant

Horizontal joints exposed to pedestrian and vehicular traffic, and all joints subject to immersion;

Where required to prevent 3-point adhesion.

5. Sonofoam Backer-Rod

B. For other services, provide products especially formulated for the proposed use and approved in advance by the Engineer.

C. Colors:

1. Colors for each sealant installation will be selected by the Engineer from standard colors normally available from the specified manufacturer.
2. Should such standard color not be available from the approved manufacturer except at additional charge, provide such colors at no additional charge.
3. In concealed installations, and in partially or fully exposed installations where so approved by the Engineer, use standard gray or black sealant.

## 2.2 PRIMERS

A. Use only those primers which have been treated for durability on the surfaces to be sealed and are specifically recommended for this installation by the manufacturer of the sealant used.

## 2.3 BACKUP MATERIALS

A. Use only those backup materials which are specifically recommended for this installation by the manufacturer of the sealant used, which are non-absorbent, and which are non-staining.

## 2.4 MASKING TAPE

A. For masking around joints, provide an appropriate masking tape which will effectively prevent application of sealant on surfaces not scheduled to receive it, and which is removable without damage to substrate.

## 2.5 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

## PART 3 - EXECUTION

### 3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

### 3.2 PREPARATION

- A. Concrete and ceramic tile surfaces:
  1. Install only on surfaces which are dry, sound, and well brushed, wiping free from dust.
  2. At open joints, remove dust by mechanically blown compressed air if so required.
  3. To remove oil and grease, use sandblasting or wire brushing.
  4. Where surfaces have been treated, remove the surface treatment by sandblasting or wire brushing.
  5. Remove laitance and mortar from joint cavities.
- B. Steel surfaces:
  1. Steel surfaces in contact with sealant:
    - a. Sandblast as required to achieve acceptable surface for bond.
    - b. If sandblasting is not practical, or would damage adjacent finish, scrape the metal or wire brush to remove mill scale and rust.
    - c. Use solvent to remove oil and grease, wiping the surfaces with clean white rags only.
  2. Use only such solvents to remove protective coatings as are recommended for that purpose by the manufacturer of the aluminum work, and which are non-staining.

### 3.3 INSTALLATION OF BACK MATERIAL

- A. When using backup of tube or rod stock, avoid lengthwise stretching of the material. Do not twist or braid hose or rod backup stock.
- B. Installation tool:
  1. For installation of backup material, provide a blunt-surfaced tool of wood or plastic, having shoulders designed to ride on the adjacent finished surface and a protrusion of the required dimensions to assure uniform depth of backup material below the sealant.
  2. Do not, under any circumstances, use a screwdriver or similar tool for this purpose.
  3. Using the approved tool, smoothly and uniformly place the backup material to the depth indicated on the Drawings or otherwise required, compressing the backup material 25% to 50% and securing a positive fit.

### 3.4 PRIMING

- A. Use only the primer approved by the Engineer for the particular installation, applying in strict accordance with the manufacturer's recommendations as approved by the Engineer.

### 3.5 BOND-BREAKER INSTALLATION

- A. Provide an approved bond-breaker where recommended by the manufacturer of the sealant, and where directed by the Engineer, adhering strictly to the manufacturers' installation recommendations.

### 3.6 INSTALLATION OF SEALANTS

- A. Prior to start of installation in each joint, verify the joint type according to details on the Drawings, or as otherwise directed by the Engineer, and verify that the required proportion of width of joint to depth of joint has been secured.
- B. Equipment:
  - 1. Apply sealant under pressure with power-actuated hand gun or manually-operated hand gun, or by other appropriate means.
  - 2. Use guns with nozzle of proper size, and providing sufficient pressure to completely fill the joints as designed.
- C. Thoroughly and completely mask joints where the appearance of primer or sealant on adjacent surfaces would be objectionable.
- D. Install the sealant in strict accordance with the manufacturer's recommendations, thoroughly filling joints to the recommended depth.
- E. Tool joints to the profile shown on the Drawings, or as otherwise required if such profiles are not shown on the Drawings.
- F. Cleaning up:
  - 1. Remove masking tape immediately after joints have been tooled.
  - 2. Clean adjacent surfaces free from sealant as the installation progresses, using solvent or cleaning agent recommended by the manufacturer of the sealant used.
  - 3. Upon completion of the work of this Section, promptly remove from the job site all debris, empty containers, and surplus material derived from this portion of the Work.

END OF SECTION

## SECTION 08111

### STANDARD STEEL DOORS AND FRAMES

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Non-rated rolled steel doors and frames.
- B. Interior light frames.

##### 1.2 RELATED WORK

- A. Section 08710 - Hardware.
- B. Section 08800 - Glazing.
- C. Section 09900 - Painting: Field painting of doors and frames.

##### 1.3 REFERENCES

- A. ASTM E152 - Methods of Fire Tests of Door Assemblies.
- B. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- C. NFPA 80 - Fire Doors and Windows.
- D. NFPA 252 - Fire Tests for Door Assemblies.
- E. SDI-100 - Standard Steel Doors and Frames.
- F. SDI-105 - Recommended Erection Instructions for Steel Frames.
- G. UL 10B - Fire Tests of Door Assemblies.

##### 1.4 QUALITY ASSURANCE

- A. Conform to requirements of SDI-100.

##### 1.5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, and finish.
- C. Indicate door elevations, internal reinforcement, closure method, and cut outs for glazing.

- D. Submit manufacturer's installation instructions under provisions of Section 01300.

#### 1..6 DELIVERY, STORAGE AND PROTECTION

- A. Protect products under provisions of Section 01600.
- B. Protect doors with resilient packaging sealed with heat shrunk plastic.
- C. Break seal on-site to permit ventilation.

### 2. PART 2 PRODUCTS

#### 2..1 DOORS AND FRAMES

- A. Exterior Doors: SDI-100 Grade III Model 2. Galvanized.
- B. Interior Doors: SDI-100 Grade II Model 2.
- C. Exterior Frames: 16 gage material, Galvanized.
- D. Interior Frames: 16 gage material.

#### 2..2 DOOR CORE

- A. Core: Impregnated cardboard honeycomb, interior and Polyurethane insulation, exterior.
- B. Insulated door insulation value of R-16.

#### 2..3 ACCESSORIES

- A. Rubber Silencers Resilient rubber.
- B. Glazing Stops: Rolled steel channel shape, butted or mitered corners; prepared for countersink style screws.

#### 2..4 PROTECTIVE COATINGS

- A. Bituminous Coating: Fibered asphalt emulsion.
- B. Primer: Zinc chromate type.

#### 2..5 FABRICATION

- A. Fabricate frames for knock down field assembly type.
- B. Fabricate frames and doors with hardware reinforcement plates welded in place.
- C. Prepare frame for silencers. Provide three single rubber silencers for single doors on strike side, and two single silencers on frame head at double doors without mullions.

- D. Attach fire rated label to each frame and door unit.
- E. Close top edge of exterior door flush with inverted steel channel closure. Seal joints watertight.

## 2..6 FINISH

- A. Interior Units: primed.
- B. Exterior Units: 0.60 oz/sq ft galvanized and primed.
- C. Primer: Baked on.

## 3. PART 3 EXECUTION

### 3..1 INSTALLATION

- A. Install frames in accordance with SDI-105.
- B. Install doors in accordance with DHI.
- C. Coordinate with wall construction for anchor placement.
- D. Coordinate installation of glass and glazing.

### 3..2 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

### 3..3 ADJUSTING AND CLEANING

- A. Adjust hardware for smooth and balanced door movement.

END OF SECTION



## SECTION 08333

### OVERHEAD COILING SHUTTER

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section includes overhead coiling counter shutter, operating hardware, manual operation.

##### 1.2 REFERENCES

- A. ASTM A653/A653M - Standard Specification for Steel Sheets, Zinc-coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM A924/A924M - Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
- C. ASTM A666 - Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- D. ASTM B221/A221M - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
- E. NEMA 250 (National Electrical Manufacturers Association) - Enclosures for Electrical Equipment (1000 Volts Maximum).
- F. NEMA ICS 2 (National Electrical Manufacturers Association) - Standards for Industrial Control Devices, Controllers and Assemblies.
- G. NEMA MG1 (National Electrical Manufacturers Association) - Motors and Generators.
- H. NFPA 80 (National Fire Protection Association) - Fire Doors and Fire Windows.
- I. UL (Underwriters Laboratories, Inc.) - Building Materials Directory.
- J. UL 325 (Underwriters Laboratories, Inc.) - Door, Drapery, Gate, Louver, and Window Operators and Systems.
- K. WH (Warnock Hersey) - Directory of Listed Products.

##### 1.3 SYSTEM DESCRIPTION

- A. Manual Operation: Manual push up unit with overhead counter balance device, requiring 25 lb nominal force to operate.

##### 1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.



- B. Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.
- C. Product Data: Submit general construction, component connections and details].
- D. Samples: Submit two shutter slats, 300 x 300 mm in size illustrating shape, color and finish texture.
- E. Manufacturer's Installation Instructions: Indicate installation sequence and procedures, and adjustment and alignment procedures.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 - Execution Requirements: Closeout procedures.
- B. Operation and Maintenance Data: Submit lubrication requirements and frequency, and periodic adjustments required.

#### 1.6 QUALITY ASSURANCE

- A. Fire Rated Assemblies: When required provide assemblies complying with NFPA 80 and listed in UL Directory or Warnock Hersey Directory.
- B. Products Requiring Electrical Connection: Listed and classified by UL or another testing firm acceptable to authority having jurisdiction.
- C. Installer: Company specializing in performing Work of this section with minimum five years documented experience approved by manufacturer.

### PART 2 PRODUCTS

#### 2.1 OVERHEAD COILING COUNTER SHUTTERS

- A. Manufacturers:
  1. Cookson Co.
  2. Cornell Iron Works, Inc.
  3. Dynaflair Corp.
  4. Metro Door
  5. Raynor Garage Door
  6. Trac-Rite Door
  7. Substitutions: Section 01600 - Product Requirements.
- B. Product Description:
  1. Manual Operation: Manual lift push up unit with overhead counter balance device, requiring 25 lb nominal force to operate.

#### 2.2 COMPONENTS

- A. Curtain: Conform to following; fire rated in accordance with requirements indicated on Drawings:

1. Steel Slats: Interlocking, minimum 22 gage of ASTM A653 steel, minimum galvanized coating designation G90 (Z275) in accordance with ASTM A924;
    - a. Type: S-configuration slat.
  2. Nominal Slat Size: 2 inches wide by required length.
  3. Slat Ends: Each slat fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
  4. Curtain Bottom: Fitted with angles, channels, or tubes to provide reinforcement and positive contact with counter in closed position.
- B. Guides: Minimum 3/16 inch; galvanized steel conforming to ASTM A653, minimum galvanized coating designation G90 (Z275) in accordance with ASTM A924.
1. Furnish continuous angles of profile to retain shutter in place; mounting brackets of same metal.
- C. Roller Shaft Counterbalance: Steel pipe and [helical] steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension.
- D. Integral Hood Enclosure and Facia: Square shape, minimum 16 gage galvanized steel; internally reinforced to maintain rigidity and shape. Between jamb type unit with slip in type installation.
- E. Hardware:
1. Locks: Furnish locks to allow shutters to be secured.
  2. Manual Doors: Manufacturer's standard cylinder dead lock on inside at door jamb, key operated from exterior and interior.
  3. Handle: Inside center mounted, adjustable keeper, spring activated latch bar with feature to keep in locked or retracted position; interior and exterior handle.

## 2.3 FINISH

- A. Powder coating polyester finish; color as selected.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01300 - Administrative Requirements: Coordination and project conditions.
- B. Verify opening sizes, tolerances and conditions are acceptable.

### 3.2 INSTALLATION

- A. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- B. Fit and align assembly including hardware; level and plumb, to provide smooth operation.

- C. Install fire rated door assemblies in accordance with NFPA 80 and requirements for fire listing.
- D. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.
- E. Install perimeter trim and closures.

### 3.3 ERECTION TOLERANCES

- A. Section 01400 - Quality Requirements: Tolerances.
- B. Maintain dimensional tolerances and alignment with adjacent Work.
- C. Maximum Variation From Plumb: 1/16 inch.
- D. Maximum Variation From Level: 1/16 inch.
- E. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

### 3.4 ADJUSTING

- A. Section 01700 - Execution Requirements: Testing, adjusting, and balancing.
- B. Adjust shutter, hardware and operating assemblies for smooth and noiseless operation.

### 3.5 CLEANING

- A. Section 01700 - Execution Requirements: Final cleaning.
- B. Clean shutter and components.
- C. Remove labels and visible markings.

END OF SECTION

## SECTION 08410

### ALUMINUM ENTRANCES AND WINDOWS

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Aluminum doors, frames and glazed lights.
- B. Fixed Windows.
- C. Glass.
- D. Anchors, brackets, and attachments.
- E. Door hardware.
- F. Perimeter sealant.

##### 1.2 WORK INSTALLED BUT FURNISHED UNDER OTHER SECTIONS

- A. Section 08710 - Hardware: Door hardware items other than specified in this Section.

##### 1.3 RELATED WORK

- A. Section 04300 - Unit Masonry System: Preparation of adjacent work to receive work of this Section.
- B. Section 05500 - Metal Fabrications: Fabricated metal attachment devices.
- C. Section 06100 - Rough Carpentry: Framed blocking and Wood perimeter shims.
- D. Section 07900 - Joint Sealers: Perimeter sealant and back-up materials.
- E. Section 08800 - Glazing.

##### 1.4 REFERENCES

- A. ANSI/ASTM A36 - Structural Steel.
- B. ANSI/ASTM A386 - Zinc Coating (Hot-Dip) on Assembled Steel Products.
- C. ANSI/ASTM A446 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- D. ANSI/ASTM B221 - Aluminum-Alloy Extruded Bar, Rod, Wire, Shape, and Tube.

- E. ANSI/ASTM E283 - Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors.
- F. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- G. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- H. FS TT-P-31-Paint, Oil: Iron Oxide, Ready Mixed, Red and Brown.
- I. FS TT-P-641 - Primer Coating; Zinc Dust-Zinc Oxide (for Galvanized Surfaces).
- J. FS TT-P-645 - Primer, Paint, Zinc Chromate, Alkyd Type.

#### 1..5 PERFORMANCE

- A. System to provide for expansion and contraction within system components caused by a cycling temperature range of 170 F degrees without causing detrimental effects to system or components.
- B. Design and size members to withstand dead loads and live loads caused by pressure and suction of wind as calculated in accordance with BOCA code.
- C. Limit mullion deflection to 1/200, or flexure limit of glass with full recovery of glazing materials, whichever is less.
- D. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior.
- E. Limit air infiltration through assembly to 0.06 cu ft/min/sq ft of assembly surface area, measured at a reference differential pressure across assembly of 0.3 inches water gage as measured in accordance with ANSI/ASTM E283.
- F. System to accommodate, without damage to system or components, or deterioration of perimeter seal: Movement within system; movement between system and perimeter framing components; dynamic loading and release of loads; and deflection of structural support framing.

#### 1..6 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Include system and component dimensions; components within assembly; framed opening requirements and tolerances; anchorage and fasteners; glass and infills; door hardware requirements; and affected related work.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.
- D. Submit samples under provisions of Section 01300.

- E. Submit samples, illustrating prefinished aluminum surface and specified glass.

#### 1..7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and handle system components under provisions of Section 01600.
- B. Store and protect system components under provisions of Section 01600.
- C. Provide wrapping to protect prefinished aluminum surfaces.

#### 1..8 WARRANTY

- A. Provide five year manufacturer's warranty under provisions of Section 01700.
- B. Warranty: Cover complete system for failure to meet specified requirements.

### 2. PART 2 PRODUCTS

#### 2..1 ACCEPTABLE MANUFACTURERS

- A. Kawneer 350 Series -Wide Style Door and TriFab 450T Style Frames or equivalent manufactured by Amarlite and YKK.
- B. Substitutions: Under provisions of Section 01600.

#### 2..2 MATERIALS

- A. Extruded Aluminum: ANSI/ASTM B221.
- B. Sheet Aluminum: ASTM B209.
- C. Sheet Steel: ANSI/ASTM A446; galvanized.
- D. Steel Sections: ANSI/ASTM A36 shapes to suit mullion sections.
- E. Primer: FS TT-P-31; brown, for shop application and field touch-up.
- F. Touch-Up Primer for Galvanized Surfaces: FS TT-P-641.
- G. Fasteners: Stainless steel.

#### 2..3 FABRICATED COMPONENTS

- A. Frames: 1 3/4 x 4 1/2 inch profile, thermally broken with interior portion of frame insulated from exterior portion.
- B. Doors: 2 inches thick, bevelled glazing stops.
- C. Pivot Mullions - See drawings for correct angles.

#### 2..4 GLASS AND GLAZING MATERIALS

- A. Glass in Exterior Lights: Clear, sealed insulated units of plate glass.
- B. Glass in Doors: and Adjacent Lights: Clear, single pane of tempered glass.
- C. Glass in Multi Purpose Room Window Clear, sealed insulated units with interior pane of fully tempered impact resistant glass.

#### 2..5 HARDWARE

- A. Weatherstripping, Sill Sweep Strips, Thresholds, Hinges: Manufacturers' standard type to suit application.
- B. Weatherstripping: Wool pile, continuous.
- C. Sill Sweep Strips: Resilient seal type, of neoprene compound.
- D. Threshold: Extruded aluminum, one piece per door opening, ribbed surface, handicap accessible.
- E. Pivots: Offset type.
- F. Panic set with pull.
- G. Closer: Norton 8100 BF with handicap delay.
- H. Cylinder Lock: by others.
- I. Thumb Turn.

#### 2..6 FABRICATION

- A. Fabricate doors and frames allowing for minimum clearances and shim spacing around perimeter of assembly, yet enabling installation.
- B. Rigidly fit and secure joints and corners with screw and spline. Make joints and connections flush, hairline, and weatherproof.
- C. Develop drainage holes with moisture pattern to exterior.
- D. Prepare components to receive anchor devices. Fabricate anchorage items.
- E. Arrange fasteners, attachments, and jointing to ensure concealment from view.
- F. Prepare components with internal reinforcement for door hardware.

## 2..7 FINISHES

- A. Exterior Extruded Aluminum Surfaces: Coat with a Fluoropolymer paint coating per AAMA 605.2. Color to be selected by Engineer.
- B. Apply one coat of bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials.

## 3. PART 3 EXECUTION

### 3..1 INSPECTION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

### 3..2 INSTALLATION

- A. Install doors, frames, windows, glazing and hardware in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely attach frame assembly to structure.
- C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- D. Coordinate attachment and seal of air and vapor barrier materials.
- E. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- F. Install hardware using templates provided.
- G. Install glass in accordance with manufacturers instructions using exterior wet method of glazing.
- H. Install perimeter type sealant, backing materials, and installation requirements in accordance with Section 07900.
- I. Adjust operating hardware.

### 3..3 TOLERANCES

- A. Variation from Plane: 0.03 inches per foot maximum or 0.25 inches per 30 feet, whichever is less.
- B. Misalignment of Two Adjoining Members Abutting in Plane: 0.015 inches.



### 3.4 CLEANING

- A. Remove protective material from prefinished aluminum surfaces.
- B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION

## SECTION 085213

### -METAL-CLAD WOOD WINDOWS

#### 1. PART 1 GENERAL

##### 1.1 SUMMARY

A. Section Includes: Wood-framed, aluminum-clad windows of the following types:  
**casement direct-set fixed.**

B. Related Sections: Section(s) related to this section include:

1. Section 06112 – Framing and Sheathing.
2. Section 06113 – Wood Blocking and Curbing.
3. Section 073636 – Cement Board Siding
4. Section 07900 – Joint Sealers

##### 1.2 REFERENCES

A. General: Standards listed by reference form a part of this specification section. Standards listed are identified by issuing authority, abbreviation, designation number, title or other designation. Standards subsequently referenced in this Section are referred to by issuing authority abbreviation and standard designation.

B. American Architectural Manufacturers Association (AAMA):

1. AAMA 450 - Voluntary Performance Rating Method for Mullled Fenestration Assemblies.
2. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products.
3. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
4. AAMA 902 - Voluntary Specification for Sash Balances.
5. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
6. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
7. NAFS - North American Fenestration Standard/Specification for windows, doors and skylights.

C. Andersen E-Series Product Installation Guides.

D. ASTM International (ASTM):

1. ASTM C1036 - Standard Specification for Flat Glass.
  2. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
  3. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
  4. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.
  5. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
  6. ASTM F2090 - Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.
- E. Forest Stewardship Council (FSC): FSC Chain-of-Custody Certification.
- F. Insulating Glass Certification Council (IGCC): Insulating Glass Unit Certification.
- G. Insulating Glass Manufacturers Alliance of Canada (IGMAC) and Canadian General Standards Board (CGSB): Insulating Glass Units Standard CAN/CGSB 12.8-97.
- H. International Standards Organization (ISO): ISO 14021 - Environmental Labels and Declarations -- Self-Declared Environmental Claims (Type II Environmental Labeling).
- I. National Fenestration Rating Council (NFRC):
1. NFRC 100 - Procedure for Determining Fenestration Product U-Factors.
  2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
- K. U.S. Environmental Protection Agency (EPA): ENERGY STAR.
- L. Window and Door Manufacturers Association (WDMA):
1. WDMA Hallmark Certification Program for Manufacturers.
  2. WDMA I.S. 4 - Industry Specification for Preservative Treatment for Millwork.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- A. Pre-installation Meetings: Conduct pre-installation meeting to clarify Project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

### 1.4 PERFORMANCE REQUIREMENTS

A. Structural Performance Requirements:

1. Comply with requirements of NAFS.
2. <Insert requirements>.

## 1.5 SUBMITTALS

A. Product Data: For each type of product required.

B. Shop Drawings: Showing methods of installation, plans, sections, elevations and details of walls, specified loads, flashings, vents, sealants, and interfaces with all materials not supplied by the window manufacturer, and identification of proposed component parts and finishes.

C. Samples: Selection and verification samples for finishes, colors and textures. Submit two complete sample sets of each type of material required.

D. Certificates: Signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.

E. Test and Evaluation Reports: Showing compliance with specified performance characteristics and physical properties.

F. Manufacturer Instructions: Manufacturer installation, storage, and other instructions.

## 1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Member in good standing of the Insulating Glass Certification Council (IGCC).
2. Hallmark Certified Manufacturer and member in good standing of the Window and Door Manufacturers Association (WDMA).
3. Member in good standing of the U.S. Green Building Council.
4. U.S. EPA ENERGY STAR Partner.
5. Capable of demonstrating an extended history of window and door design, production and innovation.

B. Installer Qualifications:

1. Minimum five years' experience in the commercial installation of products required for the Project.

2. Experience on at least five projects of similar size, type and complexity as the Project.
3. An entity utilizing workers competent in techniques required by manufacturer for product types and applications indicated.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Deliver materials to Project in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials and accessories protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by manufacturer off ground, under cover and not exposed to weather and construction activities.

## 1.8 WARRANTY

- A. Special Warranty: Manufacturer's transferrable, non-prorated limited warranty.
  1. Warranty Period, Glass: 20 years.
  2. Warranty Period, Non-Glass Parts: 10 years.
- B. Special Warranty: Installer's standard form in which installer agrees to repair or replace windows that fail due to poor workmanship or faulty installation within the specified warranty period.
  1. Warranty Period: Two (2) years from date of Substantial Completion.

## PART 2 PRODUCT

### 2.1 METAL-CLAD WOOD WINDOWS

- A. General: Provide windows complying with the performance requirements indicated and tested according to NAFS.
- B. Basis-of-Design Product: Subject to compliance with requirements provide Andersen Corporation: Andersen E-Series windows.

C. Substitution Limitations: **Submit substitution request in accordance with Section 01330.**

## 2.2 MATERIALS

### A. Construction:

1. Cladding: Extruded aluminum, minimum thickness 0.050 inch (1.27 mm).
2. Frame: Preservative treated laminated veneer lumber.
3. Interior Exposed Frame: Preservative treated solid lumber, kiln dried and suitable for stain or painted finish.
4. Sash: Preservative treated solid lumber, kiln dried and suitable for stain or painted finish.

### B. Wood Species: **Pine, FSC Certified – Mixed Credit.**

### C. Interior Finish:

1. Painted: Factory-applied before assembly, Color selected by Owner's consultants from factory standard colors..

### D. Exterior Finish:

1. Painted Frame: Factory-applied baked-on silicone polyester enamel, in compliance with **color as selected from manufacturer's standard colors of no less than 50 options and approved by Owner's Consultant.**
2. Painted Sash: Factory-applied baked-on silicone polyester enamel, in compliance with **color as selected from manufacturer's standard colors of no less than 50 options as selected and approved by Owner's Consultant.**

## 2.3 WINDOW <Insert window designation(s) used on Drawings>.

### A. Window Type and Performance Requirements: **Casement Fixed Window.**

2. **Casement:** Performance Class CW and Grade, Non-Impact-Resistant.

### B. Air Infiltration Requirements:

1. Air Infiltration Rate: **< 0.2 cfm/sf<sup>2</sup>.**

### B. Environmental Certifications:

1. ENERGY STAR performance requirements.
2. Indoor air quality performance.

D. Installation Flange:  
J. Exterior Trim and Accessories:

4. Type: **As indicated in Drawings.**
5. Material: Factory-applied extruded aluminum with corner keys.
6. Finish and Color: **Match windows.**

## 2.4 NON-IMPACT-RESISTANT GLAZING

A. Thermal Transmission (U-Factor), NFRC 100:

1. Direct-set fixed: **0.28 without grilles.**

B. Solar Heat Gain Coefficient (SHGC), NFRC 200:

1. Direct-Set Fixed: **0.36 without grilles**

C. Visible Light Transmittance (VLT), NFRC 200:

1. Direct-Set Fixed: **0.62 without grilles.**

D. Sound Transmission Class (STC)/Outdoor Indoor Transmission Classification (OITC), ASTM E90:

1. Direct-set Casement: **28/24.**

E. Glass Units: Provide insulating glass units certified through **Insulating Glass Certification Council as conforming to the requirements of IGCC and ASTM E2190.**

1. Manufacturer Designation: Andersen Low-E4 Glass.
2. Glazing Configuration: **Dual-pane.**
3. Tint: **Gray.**
4. Seal and Spacer Type: Dual sealed insulating glass units with polyisobutylene primary seal, silicone secondary seal and stainless steel spacers.
5. Glass Spacer Color: **Black.**
6. Glass Type: **Annealed glass, ASTM C1036].**
7. Opacity: **Obscure where noted.**

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that all substrate conditions are suitable for installation in compliance with manufacturer's recommendations.
- B. Do not begin installation until substrates have been properly prepared and any conditions not in compliance with manufacturer's recommendations have been corrected.

### 3.2 INSTALLATION

- A. General: Comply with manufacturer's product recommendations, including but not limited to the Andersen Unit Installation Guide, installation information in product literature and on product packaging. Comply with Drawings **and Shop Drawings** for installing windows, hardware, accessories, and other components.
- B. Install windows plumb, level and square. Anchor windows securely to structure in correct orientation to flashing and adjacent construction as indicated. Comply with product installation instructions for proper flashing integration into wall system. Install windows so as to drain water penetration to the exterior.
- C. Adjust accessories as applicable for correct fit. Adjust for weather-tight closure.

### 3.3 CLEANING

- A. Refer to manufacturer for guidance on timing for when best to remove protective films and non-permanent labels after installation.
- B. Remove excess sealant, soiling, dirt and other substances. Clean window frame and glass surfaces. Avoid damaging coatings and finishes.
- C. Touch-up, repair or replace glass or other window components broken, scratched or damaged during construction prior to Substantial Completion.
- D. Remove and lawfully dispose of construction debris from Project site.

### 3.4 PROTECTION

- A. Protect installed windows and finish surfaces from damage during construction until completion of Project and acceptance by Owner.

END OF SECTION





## SECTION 08710

### FINISH HARDWARE

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION

- A. Work included:
  - 1. Furnish finish hardware required to complete the Work as shown on the Drawings and as specified herein;
  - 2. Furnish trim attachments and fastenings, specified or otherwise required, for proper and complete installation;
  - 3. Deliver to the job site those items of finish hardware scheduled to be installed at the job site; and deliver to other points of installation those items of finish hardware scheduled to be factory installed.
  
- B. Related work:
  - 1. Section 08111 - Standard Steel Doors and Frames.
  - 2. Section 08210 - Wood Doors.
  
- C. Definitions:
  - 1. "Hardware groups" described in the Hardware Schedule in Part 3 of this Section are shown on the Door Schedule.

##### 1.2 QUALITY ASSURANCE

- A. Provide the services of an AHC or DAHC member of the American Society of Architectural Hardware Consultants to:
  - 1. Be available for consultation with the Engineer at no additional cost to the Owner during progress of construction;
- B. The hardware consultant may be an employee of the supplier.

##### 1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
  
- B. Product data: Within 21 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
  - 1. Materials list of items proposed to be provided under this Section.
    - a. Approval of this list by the Engineer will not relieve the Contractor of the responsibility to provide all finish hardware items required for the Work even though such required items may not have been shown on the approved list.
  
- C. Templates: In a timely manner to assure orderly progress of the Work, deliver templates or physical samples of the approved finish hardware items to pertinent manufacturers of interfacing items such as doors and frames.

#### 1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01600.
- B. Individually package each unit of finish hardware, complete with proper fastenings and appurtenances, clearly marked on the outside to indicate contents and specific locations in the Work.

### PART 2 - PRODUCTS

#### 2.1 GENERAL

- A. Fasteners:
  - 1. Furnish necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
  - 2. Where necessary, furnish fasteners with toggle bolts, expansion shields, sex bolts, and other anchors approved by the Engineer, according to the material to which the hardware is to be applied and according to the recommendations of the hardware manufacturer.
  - 3. Provide fasteners which harmonize with the hardware as to finish and material.
- B. Where butts are required to swing 180 degrees, furnish butts of sufficient throw to clear the trim.
- C. Furnish silencers for door frames at the rate of three for each single door and two for each door or pair of doors; except weatherstripped doors and doors with light seals or sound seals.

#### 2.2 KEYING

- A. Factory key and masterkey, locks and cylinders as directed by the Owner.
- B. Furnish two factory keys for each lock and two masterkeys for each set.
- C. Construction keying:
  - 1. Furnish a construction masterkey system with 4 keys for locks and cylinders.
  - 2. Use only the construction keys during construction.
  - 3. Upon Substantial Completion of the Work, as that Date is established by the Engineer, void the construction key system and, in the presence of the Engineer, demonstrate that the specified keying system is operating properly.
- D. Identification and delivery:
  - 1. Factory stamp permanent keys, "DO NOT DUPLICATE."
  - 2. Identify permanent keys with tags, and send direct to the Owner by registered mail or receipted personal delivery.
- E. Key box:
  - 1. Provide a secure lockable metal storage unit for keys.

F. Match Owner's existing keying system.

2.3 TOOLS AND MANUALS

A. With the delivery of permanent keys, deliver to the Owner one complete set of adjustment tools and one set of maintenance manuals for locksets, latchsets, closers, and panic devices.

2.4 ACCEPTABLE PRODUCTS

- A. Single source for items:
1. Except as specifically otherwise approved in advance by the Engineer, furnish for each item (such as "door butt type 1") only the product of a single manufacturer (such as "Soss BB 1279").
  2. To the maximum extent practicable, furnish similar items (such as "door butts") only as the product of a single manufacturer (such as "Soss").
- B. For each of the required items of finish hardware, provide from the specified manufacturer or from one of the indicated acceptable substitutes:

Item:	Manufacturer:	Acceptable substitute:
Butts:	Stanley	Hager or Mckinney
Closers:	Corbin Russwin	LCN or Norton
Lock Set	Corbin Russwin	Schlage, Sargent
Panic bolts:	Corbin Russwin	Von Duprin
Thresholds:	National Guard	Pemko Products
Miscellaneous:	Rockwood	Trimco

C. Provide the finishes shown on the schedule.

2.5 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 DELIVERIES

A. Stockpile items sufficiently in advance to assure their availability, and make necessary deliveries in a timely manner to assure orderly progress of the total Work.

3.2 COORDINATION

A. Coordinate as necessary with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Upon completion of the Work, and as a condition of its acceptance, provide the inspection, adjustment, and report described in Article 1.2 above.

3.3 FINISH HARDWARE SCHEDULE

A. Provide finish hardware schedule detailing all hardware for each door in project.

1. Hardware Set No. 1  
1 Security Latch Guard  
1 Masterkey Cylinder
2. Hardware Set No. 2  
1 1/2 Pr. BB Butts, NRP  
1 Door Closer W/ Delay  
1 Entrance Lever Lockset  
1 Masterkey Cylinder  
1 Security Latch Guard  
ADA Threshold  
Weatherstripping
3. Hardware Set No. 3  
1/2 pr. BB Butts  
1 Office Lever Lockset  
1 Masterkey Cylinder
4. Hardware Set No. 4  
1/2 pr. BB Butts  
1 Storeroom Lever Lockset  
1 Masterkey Cylinder
5. Hardware Set No. 5  
1/2 pr. BB Butts  
1 Push Plate  
1 Pull Handle  
1 Closer W/ Delay  
1 Keyed Dead Bolt  
1 Masterkey Cylinder
6. Hardware Set No. 6  
3 pr. BB Butts  
1 Storeroom Lever Lockset  
1 Masterkey Cylinder  
1 T & B Throw Bolts  
1 Astragal  
4 Kick Plates

END OF SECTION

## SECTION 08800

### GLAZING

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Glass and glazing for Sections referencing this Section for products and installation.
- B. Glass and glazing for hollow metal work and doors.

##### 1.2 RELATED SECTIONS

- A. Section 07900 - Joint Sealers: Sealant and back-up material.

##### 1.3 REFERENCES

- A. ANSI/ASTM E330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- B. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
- C. ASTM C1036 - Flat Glass.
- D. ASTM C1048 - Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
- E. FGMA - Glazing Manual.
- F. FGMA - Sealant Manual.
- G. FS TT-C-00598 - Calking Compound, Oil and Resin Base Type.
- H. FS TT-S-001657 - Sealing Compound, Single Component, Butyl Rubber Based, Solvent Release Type.
- I. FS TT-S-00227 - Sealing Compound, Rubber Base, Two Component.
- J. FS TT-S-00230 - Sealing Compounds, Synthetic-Rubber Base, Single Component, Chemically Curing.
- K. FS TT-S-01543 - Sealing Compound, Silicone Rubber Base.
- L. FS TT-G-410 - Glazing Compound, Sash (Metal) for Back Bedding and Face Glazing (Not for Channel or Stop Glazing).

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data on Glass Types Specified: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- D. Manufacturer's Installation Instructions: Indicate special precautions required.

#### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with FGMA Glazing Manual glazing installation methods.

#### 1.6 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on Drawings.

### 2. PART 2 PRODUCTS

#### 2.1. FLAT GLASS MATERIALS

- A. Tempered Safety Glass (Type FG-B): Clear ; fully tempered conforming to ANSI Z97.1; 1/4 inch thick minimum.
- B. Wire Glass (Type FG-G): Clear , polished both sides, diagonal mesh of woven stainless steel wire of ½ inch grid size; 1/4 inch thick.
- C. Insulated Glass: Guardian Industries, SunGuard LE40, 1/4" clear coating on #2 surface, heat strengthened glass, ½" air space, inboard lite 1/4" clear with a 1" total thickness with high performance solar coating. Provide face glass with tempered safety glass where noted on drawings or as required by Code.

#### 2.2. GLAZING COMPOUNDS

- A. Butyl Sealant (Type GC-B): FS TT-S-001657; Shore A hardness of 10-20 black color; non-skinning.
- B. Polyurethane Sealant (Type GC-E): FS TT-S-00230, Type II --non-sag, Class A.
- C. Silicone Sealant (Type GC-F): Single component, chemical solvent curing; capable of water immersion without loss of properties; non-staining; cured Shore A hardness of 15-25; color as selected.

#### 2.3. GLAZING ACCESSORIES

- A. Setting Blocks: 80 - 90 Shore A durometer hardness, length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: 50 - 60 Shore A durometer hardness, minimum 3 inch long x one half the

height of the glazing stop x thickness to suit application, self adhesive on one face.

- C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 - 15 Shore A durometer hardness; coiled on release paper; black color.

### 3. PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

#### 3.2 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.

#### 3.3 INTERIOR - DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

#### 3.4 INTERIOR - WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.



- D. Install removable stops, with spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.
- E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

### 3..5 INTERIOR - WET METHOD (COMPOUND AND COMPOUND)

- A. Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 24 inch centers, kept 1/4 inch below sight line.
- B. Locate and secure glazing pane using spring wire clips glazers' clips.
- C. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

### 3..6 INSTALLATION - MIRRORS

- A. Set mirrors with adhesive, applied in accordance with adhesive manufacturer's instructions.
- A. Place plumb and level.

### 3..11 CLEANING

- A. Clean work under provisions of 01700.
- B. Remove glazing materials from finish surfaces.
- C. Remove labels after work is complete.
- D. Clean glass and mirrors.

### 3..12 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. After installation, mark pane with an 'X' by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units.

END OF SECTION

SECTION 09260  
GYPSUM BOARD SYSTEMS

1. PART 1 GENERAL

1..1 WORK INCLUDED

- A. Metal stud wall framing.
- B. Exterior board sheathing.

1..2 RELATED WORK

- A. Section 06114 - Wood Blocking and Curbing: Wood blocking for support of toilet and bath accessories.
- B. Section 07410 - Metal Wall Panels.
- C. Section 08111 - Standard Steel Doors and Frames.

1..3 REFERENCES

- A. ANSI/ASTM C36 - Gypsum Wallboard.
- B. ANSI/ASTM C79 - Gypsum Sheathing Board.
- C. ANSI/ASTM C442 - Gypsum Backing Board.
- D. ANSI/ASTM C475 - Joint Treatment Materials for Gypsum Wallboard Construction.
- E. ANSI/ASTM C514 - Nails for the Application of Gypsum Wallboard.
- F. ANSI/ASTM C557 - Adhesive for Fastening Gypsum Wallboard to Wood Framing.
- G. ANSI/ASTM C630 - Water Resistant Gypsum Backing Board.
- H. ANSI/ASTM C645 - Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.
- I. ANSI/ASTM C646 - Steel Drill Screws for the Application of Gypsum Sheet Material to Light Gage Steel Studs.
- J. ANSI/ASTM C754 - Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.
- K. ANSI/ASTM E90 - Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- L. ANSI/ASTM E119 - Fire Tests of Building Construction and Materials.

- M. FS HH-I-521 - Insulation Blankets, Thermal (Mineral Fiber, for Ambient Temperatures).
- N. GA-201 - Gypsum Board for Walls and Ceilings.
- O. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

#### 1.4 QUALITY ASSURANCE

- A. Applicator: Company specializing in gypsum board systems work with five years documented experience and approved by manufacturer.

#### 1.5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Provide product data on metal framing, gypsum board and joint tape.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.

### 2. PART 2 PRODUCTS

#### 2.1 FRAMING MATERIALS

- A. Studs and Tracks: ANSI/ASTM C645; galvanized sheet steel, 20 gage minimum thick, or as noted on Drawings.
- B. Furring, Framing and Accessories: ANSI/ASTM C645 as noted on Drawings.
- C. Fasteners: ANSI/ASTM C514.
- D. Adhesive: ANSI/ASTM C557.

#### 2.2 GYPSUM BOARD MATERIALS

- A. Exterior gypsum sheathing board (Dens-Glass Gold) ASTM C1177; moisture resistant type; 5/8 inch thick, maximum permissible length and water repellent faces.

#### 2.3 ACCESSORIES

- A. Corner Beads: Metal.
- B. Edge Trim: GA 201 and GA 216; Type LC and L bead as required.
- C. Joint Materials: ANSI/ASTM C475; reinforcing tape, joint compound, adhesive, water, and fasteners.
- D. Sealing Compound: Manufacturer's compatible fire shield compound fire and smoke stop.

### 3. PART 3 EXECUTION

#### 3.1 INSPECTION

- A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on drawings.
- B. Beginning of installation means acceptance of existing surfaces and substrate.

#### 3.2 METAL STUD INSTALLATION

- A. Install studding in accordance with ANSI/ASTM C754.
- B. Metal Stud Spacing: 24 inches on center.
- C. Blocking: Screw wood blocking to studs. Bolt or screw steel channels to studs where required. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, and hardware.
- D. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

#### 3.3 FURRING INSTALLATION

- A. Erect furring for direct attachment to steel framing.
- B. Erect furring vertically. Secure in place at maximum 24 inches on center not more than 4 inches from floor and ceiling lines.

#### 3.4 GYPSUM BOARD INSTALLATION

- A. Erect exterior sheathing in accordance with manufacturer's instructions and applicable instructions GA-253.
- B. Use manufacturer's recommended screws only when fastening gypsum board to metal furring or framing.
- C. Erect exterior gypsum soffit board perpendicular to supports, with staggered end joints over supports.
- D. Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum ceiling board with sealant.
- E. Place control joints consistent with lines of building spaces as directed.
- F. Place corner beads at external corners when required. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials as indicated.

#### 3.5 JOINT TREATMENT

- A. Tape exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- B. Erect in accordance with manufacturer's instructions.

### 3..6 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

## SECTION 09312

### CERAMIC TILE WALL FINISH

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Ceramic tile wall finish using the thinset application method.

##### 1.2 RELATED SECTIONS

- A. Section 09260 - Gypsum Board.
- B. Section 09311 - Ceramic Tile Floor Finish.

##### 1.3 REFERENCES

- A. ANSI/TCA A108.4 - Installation of Ceramic Tile with Water Resistant Organic Adhesive.
- B. ANSI/TCA A108.5 - Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex Portland Cement Mortar.
- C. ANSI/TCA A108.6 - Ceramic Tile Installed with Chemical Resistant, Water Cleanable Tile-Setting and Grouting Epoxy.
- D. ANSI/TCA A118.1 - Dry-Set Portland Cement Mortar.
- E. ANSI/TCA A118.3 - Chemical Resistant, Water Cleanable Tile-Setting and Grouting Epoxy.
- F. ANSI/TCA A118.4 - Latex-Portland Cement Mortar.
- G. ANSI/TCA A136.1 - Organic Adhesives for Installation of Ceramic Tile, Type 1 and Type 2.
- H. ANSI/TCA A137.1 - Specifications for Ceramic Tile.
- I. ASTM C847 - Metal Lath.
- J. TCA (Tile Council of America) - Handbook for Ceramic Tile Installation.

##### 1.4 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Submit product data indicating material specifications, characteristics, and instructions for using adhesives and grouts.

- C. Submit samples under provisions of Section 01300.
- D. Submit manufacturer's installation instructions under provisions of Section 01300.
- E. Submit maintenance data under provisions of Section 01700.
- F. Include recommended cleaning and stain removal methods, and cleaning materials.

1..5 QUALITY ASSURANCE

- A. Conform to ANSI/TCA A137.1
- B. Conform to TCA Handbook for Ceramic Tile Installation.

1..6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1..7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in a closed, unventilated environment.
- B. Maintain 50 degrees F (10 degrees C) during installation of mortar materials.

2. PART 2 PRODUCTS

2..1 TILE MATERIAL

- A. Dal Tile Ceramic Glazed Wall Tile: ANSI/TCA A137.1, conforming to the following:

Moisture Absorption	0 to 0.5 percent
Size	4 1/4 x 4 1/4 x 1/4 inch
Edge	Square
Surface Finish	Matte glazed
Color	As selected

- B. Alternate Tile: Florida Tile
- C. Base: Match wall tile for moisture absorption, surface finish, and color; tile length 6 inch long x 4 1/4 inch high; coved bottom.

## 2..2 ADHESIVE MATERIALS

- A. Organic Adhesive: ANSI/TCA A136.1, Type 2 ; thinset bond type.

## 2..3 MORTAR MATERIALS

- A. Mortar Materials: ANSI/TCA A118.1 Dry set mortar and water.

## 2..4 GROUT MATERIALS

- A. Grout: Cementitious type with latex additive.
- B. Color Admixture: Cementitious type, compatible w/grout color as selected.

## 2..8 MORTAR MIX AND GROUT MIX

- A. Mix and proportion pre-mix setting bed and grout materials in accordance with manufacturer's instructions.

## 3. PART 3 EXECUTION

### 3..1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts condition of existing surfaces.

### 3..2 PREPARATION

- A. Protect surrounding work from damage or disfiguration.
- B. Vacuum clean existing surfaces and damp clean.

### 3..3 INSTALLATION - THINSET METHOD

- A. Install adhesive, tile, and grout in accordance with manufacturer's instructions.
- B. Lay tile to pattern indicated on Drawings. Do not interrupt tile pattern around openings.
- C. Cut and fit tile tight to penetrations through tile. Form corners and bases neatly.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar or excess grout.
- E. Form internal angles coved and external angles bullnosed.
- F. Sound tile after setting. Replace hollow sounding units.
- G. Keep control joints free of mortar or grout. Apply sealant to joints.



- H. Allow tile to set for a minimum of 48 hours prior to grouting
- I. Grout tile joints.
- J. Apply sealant to junction of tile and dissimilar materials and at junction of dissimilar planes.

#### 3.4 CLEANING

- A. Clean work under provisions of 01700.
- B. Clean tile surfaces.

END OF SECTION

## SECTION 09511

### SUSPENDED ACOUSTICAL CEILINGS

#### 1. PART 1 GENERAL

##### 1..1 WORK INCLUDED

- A. Suspended metal grid ceiling system.
- B. Acoustical tile.

##### 1..2 RELATED WORK

- A. Section 15880 - Air Outlets and Inlets: Air diffusion devices in ceiling system.
- B. Section 16500 - Interior Luminaries: Light fixtures in ceiling system.

##### 1..3 REFERENCES

- A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
- B. ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- C. FS HH-I-521 - Insulation Blankets, Thermal Mineral Fiber, for Ambient Temperatures.
- D. UL - Underwriter's Laboratories System Ratings.

##### 1..4 SUBMITTALS

- A. Submit product data under provisions of Section 01330.
- B. Provide product data on metal grid system components and acoustic units.
- C. Submit samples under provisions of Section 01330.
- D. Submit two samples illustrating material and finish of acoustic units.
- E. Submit two samples of suspension system.
- G. Submit manufacturer's installation instructions under provisions of Section 01330.

##### 1..5 ENVIRONMENTAL REQUIREMENTS

- A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and humidity of 20 to 40 percent prior to, during, and after installation.

##### 1..6 SEQUENCING/SCHEDULING

- A. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Schedule installation of acoustic units after interior wet work is dry.

#### 1.7 EXTRA STOCK

- A. Provide one carton of extra tile to Owner.

### 2. PART 2 PRODUCTS

#### 2.1 SUSPENSION SYSTEM MATERIALS

- A. Grid: ASTM C635, intermediate duty, non-fire rated exposed T components die cut and interlocking.
- B. Accessories: As required for suspended grid system.
- C. Grid Materials: Commercial quality cold rolled steel with galvanized coating. Extruded aluminum.
- D. Grid Finish: Color as selected.
- E. Support Channels and Hangers: Galvanized Primed steel; size and type to suit application, to rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

#### 2.2 ACCEPTABLE MANUFACTURERS - ACOUSTIC UNITS

- A. Armstrong
- B. USG
- C. Or approved equal

#### 2.3 ACOUSTIC UNIT PRODUCTS

- A. Type ACT 1 - Armstrong Dune
  1. Size: 24 x 48 x 5/8 inches.
  2. Composition: Preformed mineral fiber - Medium texture.
  3. Edge: Square cut.
  4. Surface Color: White.
  5. Grid: 15/16" exposed grid - White.
  6. Fire rated assembly as required.
- B. Type ACT 2 - USG Sheetrock ceiling tiles
  1. Size: 24 x 48 x 5/8 inches.
  2. Composition: Gypsum with vinyl laminated face and sealed back and edges.
  3. Edge: Square cut sealed.
  4. Surface Color: White.
  5. Grid: 15/16" exposed grid - White.

6 Install hold down clips on all tiles..

### 3. PART 3 EXECUTION

#### 3..1 INSPECTION

- A. Verify that existing conditions are ready to receive work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

#### 3..2 INSTALLATION

- A. Install system in accordance with manufacturer's instructions and as supplemented in this Section.
- B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- C. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
- D. Hang system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Center system on room axis according to reflected plan.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner; or support components independently.
- H. Do not eccentrically load system, or produce rotation of runners.
- I. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
- J. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- K. Install acoustic units level, in uniform plane, and free from twist, warp and dents.
- L. Install hold-down clips to retain panels tight to grid system within 8 ft of an exterior door and where noted.

#### 3..3 TOLERANCES

- A. Variation from Flat and Level Surface: 1/8 inch in 10 ft.
- B. Variation from Plumb of Grid Members Caused by Eccentric Loads: Two degrees maximum.

END OF SECTION

## SECTION 097720

### DECORATIVE FIBERGLASS REINFORCED WALL PANELS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Prefinished polyester glass reinforced plastic sheets and adhered to unfinished gypsum wallboard.
- B. Products Not Furnished or Installed under This Section:
  - 1. Gypsum substrate board.
  - 2. Resilient Base.

##### 1.2 RELATED SECTIONS

- A. Section 09260 – Gypsum substrate board.

##### 1.3 REFERENCES

- A. American Society for Testing and Materials: Standard Specifications (ASTM)
  - 1. ASTM D 256 - Izod Impact Strengths (ft #/in)
  - 2. ASTM D 570 - Water Absorption (%)
  - 3. ASTM D 638 - Tensile Strengths (psi) & Tensile Modulus (psi)
  - 4. ASTM D 790 - Flexural Strengths (psi) & Flexural Modulus (psi)
  - 5. ASTM D 2583- Barcol Hardness
  - 6. ASTM D 5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
  - 7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

##### 1.4 SUBMITTALS

- A. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- B. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to all discontinuities in the wall elevation.
- C. Selection Samples: Submit manufacturer's standard color pattern selection samples representing manufacturer's full range of available colors and patterns.

- D. Samples for Verification: Submit appropriate section of panel for each finish selected indicating the color, texture, and pattern required.
  - 1. Submit complete with specified applied finish.
  - 2. For selected patterns show complete pattern repeat.
  - 3. Exposed Molding and Trim: Provide samples of each type, finish, and color.
  
- E. Manufacturers Material Safety Data Sheets (MSDS) for adhesives, sealants and other pertinent materials prior to their delivery to the site (available as downloads for most Marlite's products at <http://www.marlite.com/tech-details.aspx> or by contacting Marlite at [info@marlite.com](mailto:info@marlite.com)).

## 1.5 QUALITY ASSURANCE

- A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:
  - 1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)
    - a. Wall Required Rating – Class [A] [C].
  
- B. Sanitary Standards: System components and finishes to comply with:
  - 1. United States Department of Agriculture (USDA) / Food Safety & Inspection Services (FSIS) requirements for food preparation facilities, incidental contact.
  - 2. Food and Drug Administration (FDA) 2013 Food Code 6-101.11.
  - 3. Canadian Food Inspection Agency (CFIA) requirements.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials factory packaged on strong pallets.
  
- B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (range of 60 to 75°F) for 48 hours prior to installation.

## 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Building are to be fully enclosed prior to installation with sufficient heat (70°) and ventilation consistent with good working conditions for finish work
  
- B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.
  - 1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

## 1.8 WARRANTY

- A. Furnish one-year guarantee against defects in material and workmanship.

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURER

- A. Marlite; 1 Marlite Drive, Dover, OH 44622. 800-377-1221 FAX (330) 343-4668 Email: info@marlite.com [www.marlite.com](http://www.marlite.com).
- B. Product:
  - 1. Symmetrix™ with BlueSky™ Advanced Finishing

### 2.2 PANELS

- A. Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.
  - 1. Finishing: BlueSky™ Advanced Finishing System: High resolution digital imaging with controlled, low-temperature inline curing, water-based UV-cure coatings, free of VOC UV-cure inks.
  - 2. Dimensions:
    - a. Thickness -- 0.090 " (2.29mm) nominal
    - b. Width - 4'-0" (1.22m) nominal
    - c. Length -- As indicated on the drawings
  - 3. Tolerance:
    - a. Length and Width: +/-1/8 " (3.175mm)
    - b. Square - Not to exceed 1/8 " for 8 foot (2.4m) panels or 5/32 " (3.96mm) for 10 foot (2.4m) panels
- B. Properties for Symmetrix FRP. Resistant to rot, corrosion, staining, peeling and splintering.
  - 1. Flexural Strength --  $0.9 \times 10^4$  psi per ASTM D 790.
  - 2. Flexural Modulus --  $6.0 \times 10^6$  psi per ASTM D 790.
  - 3. Tensile Strength --  $11.5 \times 10^3$  psi per ASTM D 638.
  - 4. Tensile Modulus --  $0.45 \times 10^6$  psi per ASTM D 638.
  - 5. Water Absorption - 0.15% per ASTM D 570.
  - 6. Barcol Hardness (scratch resistance) - 28 per ASTM D 2583.
  - 7. Izod Impact Strength -- 6.0 ft. lbs./in ASTM D 256.
  - 8. Mold & Mildew -- pass per ASTM D 3273.
- B. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.
- C. Front Finish: Class A.
  - a. Color Marlite Artizan FRP with BlueSky Advanced Finishing is available in a variety of Classic Marlite Finish colors and patterns, including;
    - a) C100-G63 White Subway Tile
  - 2. V 177 135° Inside Corner [8' length] [White only]
- D. Outside Corner Guard:
  - 1. F 560SS Stainless Corner Guard, 10' length
  - 2. Finish: #4 brushed satin



## 2.3 ACCESSORIES

- A. Adhesive: Either of the following construction adhesives complying with ASTM C 557.
  - 1. Marlite C-551 FRP Adhesive - Water- resistant, non-flammable adhesive.
  - 2. Marlite C-915 Construction Adhesive - Flexible, water-resistant, solvent based adhesive, formulated for fast, easy application.
  - 3. Titebond Advanced Polymer Panel Adhesive – VOC compliant, non-flammable, environmentally safe adhesive.
- B. Sealant:
  - 1. Marlite Brand - Color Match Sealant.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
  - 1. Verify that stud spacing does not exceed 24" (61cm) on-center.
- B. Repair defects prior to installation.
  - 1. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

### 3.2 INSTALLATION

- A. Comply with manufacturer's recommended procedures and installation sequence.
- B. Cut sheets to meet supports allowing 1/8" (3 mm) clearance for every 8 foot (2.4m) of panel.
  - 1. Cut and drill with carbide tipped saw blades or drill bits, or cut with shears.
- C. Apply panels to board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.
  - 1. Install panels with manufacturer's recommended gap for panel field and corner joints.
    - a. Adhesive trowel and application method to conform to adhesive manufacturer's recommendations.
- D. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.
  - 1. All moldings must provide for a minimum 1/8" (3mm) of panel expansion at joints and edges, to insure proper installation.
  - 2. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

### 3.3 CLEANING

- A. Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner.
- B. Refer to manufacturer's specific cleaning recommendations Do not use abrasive cleaners.

END OF SECTION



## SECTION 09900

### PAINTING

#### 1. PART 1 GENERAL

##### 1.1 WORK INCLUDED

- A. Surface preparation.
- B. Surface finish schedule.

##### 1.2 RELATED WORK

- A. Section 05500 - Metal Fabrications: Epoxy Primer.

##### 1.3 REFERENCES

- A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D2016 - Test Method for Moisture Content of Wood.

##### 1.4 DEFINITIONS

- A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

##### 1.5 SUBMITTALS

- A. Submit samples under provisions of Section 01300.
- B. Submit two samples illustrating range of colors and textures available for each surface finishing product scheduled, for selection.
- C. Submit manufacturer's application instructions under provisions of Section 01300.

##### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.
- D. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

- E. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in well ventilated area, unless required otherwise by manufacturer's instructions.
- F. Take precautionary measures to prevent fire hazards and spontaneous combustion.

#### 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperature for Varnish and Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

#### 1.8 EXTRA STOCK

- A. Provide a one gallon container of each color to Owner.
- B. Label each container with color, texture, room locations, and in addition to the manufacturer's label.

### 2. PART 2 PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS - PAINT

- A. Pittsburgh Paints
- B. Sherwin-Williams
- C. Duron
- D. Substitutions: Under provisions of Section 01600.

#### 2.2 ACCEPTABLE MANUFACTURERS - VARNISH AND URETHANE

- A. Pittsburgh Paints
- B. Sherwin-Williams
- C. Duron

D. Substitutions: Under provisions of Section 01600.

### 2.3 ACCEPTABLE MANUFACTURERS - STAIN

A. Pittsburgh Paints

B. Sherwin-Williams

C. Duron

D. Substitutions: Under provisions of Section 01600.

### 2.4 ACCEPTABLE MANUFACTURERS - PRIMER-SEALERS

A. Pittsburgh Paints

B. Sherwin-Williams

C. Duron

D. Substitutions: Under provisions of Section 01600.

### 2.5 ACCEPTABLE MANUFACTURERS - MASONRY STAIN

A. Sherwin Williams, H&C Shield Plus Concrete Stain.

B. Muralo Company - Concrete Stain.

C. Morrison Paint Corp. - Dura-Guard Acrylic Latex Concrete Stain.

### 2.6 MATERIALS

A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.

C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

### 2.7 FINISHES

A. Refer to schedule at end of Section for surface finish and color schedule.

## 3. PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that surfaces substrate conditions are ready to receive work as instructed by the product manufacturer.
- A. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- B. Beginning of installation means acceptance of existing surfaces.

### 3.2 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.
- B. Correct minor defects and clean surfaces which affect work of this Section.
- C. Shellac and seal marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- F. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- G. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.
- H. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- J. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.
- K. Interior Wood Items Scheduled to Receive Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- L. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.

- M. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

### 3.3 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Remove empty paint containers from site.

### 3.4 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand lightly between coats to achieve required finish.
- F. Allow applied coat to dry before next coat is applied.
- G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- H. Prime back surfaces of interior and exterior woodwork with primer paint.
- I. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

### 3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Remove unfinished ceiling louvers and grilles, on mechanical and electrical components and paint separately to match ceiling grid.
- B. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- C. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.

### 3.6 CLEANING

- A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.



- B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

### 3.7 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

- A. Metal Fabrications (Section 05500): Exposed surfaces of lintels

### 3.8 SCHEDULE - EXTERIOR SURFACES

- A. Steel bollards, lintels, railings, and roof hatch.
  - 1. Two coats latex enamel, semigloss.
- B. Steel - Shop Primed (doors and frames)
  - 1. Touch-up with zinc rich primer.
  - 2. Two coats alkyd enamel, semi-gloss.

### 3.9 SCHEDULE - INTERIOR SURFACES

- A. Miscellaneous Steel (including bollards, doors, frames and ladders)
  - 1. Touch-up with original primer.
  - 2. Two coats latex enamel, semi-gloss.

END OF SECTION

SECTION 10160  
TOILET COMPARTMENTS

1. PART 1 GENERAL

1..1 SECTION INCLUDES

- A. Metal toilet compartments, floor mounted, head rail braced.
- B. Urinal screens, wall mounted.

1..2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 06114 - Wood Blocking: Installation of concealed supports.

1..3 RELATED SECTIONS

- A. Section 06114 - Wood Blocking: In wall framing and plates. Above ceiling framing for partition panel support.
- B. Section 10800 - Toilet and Bath Accessories.

1..4 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- B. ANSI/ASTM A424 - Steel Sheets for Porcelain Enameling.
- C. ANSI/ASTM A526 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
- D. ASTM A167 - Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- E. FS RR-P-1352 - Partitions, Toilet, Complete.

1..5 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300.
- B. Indicate on shop drawings, partition plan and elevation views, dimensions, details of wall, floor and ceiling supports, and door swings.
- C. Provide product data on panel construction, hardware, and accessories.
- D. Submit samples under provisions of Section 01300.

- E. Submit two samples 4 x 4 inches in size illustrating panel finish, color, and sheen.
- F. Submit manufacturer's installation instructions under provisions of Section 01300.

## 2. PART 2 PRODUCTS

### 2..1 MANUFACTURERS

- A. Global.
- B. Metpar.
- C. Substitutions: Under provisions of Section 01600.

### 2..2 MATERIALS

- A. Toilet Compartments: Stainless Sheet Steel: ASTM A666, Type 304.
- B. Doors, Urinal Screens, Panels, and Pilasters: Stainless steel faces, pressure bonded to sound deadening core, formed and closed edges, mitered and welded corners ground smooth. Fasten with stainless steel fasteners.
- C. Head Rails: Hollow stainless steel tube, 1 x 1-5/8 inch minimum size, with anti-grip strips and cast socket wall brackets.
- D. Attachments, Screws, and Bolts: Stainless steel; tamper proof type; heavy duty extruded stainless steel brackets.
- E. Hardware: Stainless steel pivot hinges, gravity type, adjustable for door close positioning; nylon bearings; thumb turn door latch; door strike and keeper with rubber bumper; stainless steel coat hook and bumper.
- F. Pilaster shoes: Stainless steel with concealed fastenings. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster.

### 2..3 FABRICATION

- A. Fabricate partitions in accordance with FS RR-P-1352.
- B. Fabricate components of stainless steel sheets.
- C. Doors and Panels: One inch thick by 24 inch wide x 58 inch high, sheet stainless steel face, pressure bonded to sound deadening core; 36 inch wide door, swinging out on stalls for handicapped use.
- D. Pilasters: 1 inch thick, constructed same as doors, of sizes required to suit cubicle width and spacing.
- E. Pilaster Shoes: ASTM A167 Type 304 stainless steel with No. 4 finish with screw adjustment.

- F. Internal Reinforcement: Provide in areas of attached hardware and fittings. Mark locations of reinforcement for partition mounted washroom accessories.

#### 2.4 FACTORY FINISHING

- A. Clean, degrease, and neutralize panels.

### 3. PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Verify correct spacing of plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing, where required.
- D. Beginning of installation means acceptance of existing substrate.

#### 3.2 INSTALLATION

- A. Install partitions secure, plumb, and level in accordance with manufacturers' instructions.
- B. Maintain 3/8 to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to bracket with through sleeve tamperproof bolts and nuts. Locate headrail joints at pilaster center lines.
- E. Anchor urinal screen panels to walls with two panel brackets.
- F. Provide adjustment for floor variations with screw jack through steel saddles integral with pilaster. Conceal floor fastenings with pilaster shoes.
- G. Support pilasters from built-in framing using two adjustable hanging studs providing vertical leveling. Conceal ceiling fastenings with pilaster shoe.
- H. Equip each door with two hinges, one door latch, and one coat hook and bumper.
- I. Install door strike and keeper with door bumper on each pilaster in alignment with door latch.
- J. Adjust hinges to locate doors in partial opening position when unlatched. Return outswing doors to close position.

#### 3.3 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch (5 mm).

#### 3.4 CLEANING

- A. Remove protective maskings. Clean surfaces.
- B. Field touch-up of scratches or damaged finish will not be permitted.
- C. Replace damaged or scratched materials and with new materials.

END OF SECTION

## SECTION 10441

### PLASTIC SIGNS

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Engraved plastic exit sign with braille symbol.

##### 1.2 SUBMITTALS

- A. Submit shop drawings under provisions of Section 01300.
- B. Submit shop drawings listing sign styles, lettering and locations and overall dimensions of each engraved sign.
- C. Submit samples under provisions of Section 01300.
- D. Submit two samples illustrating full size sample sign, of type, style and color specified including method of attachment.
- E. Submit manufacturer's installation instructions under provisions of Section 01300.
- F. Include installation template. and hardware.

##### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600.
- B. Store and protect products under provisions of Section 01600.
- C. Package signs, labeled in name groups.
- D. Store adhesive tape at ambient room temperatures.

##### 1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not install signs when ambient temperature is below 70 degrees F. Maintain this minimum during and after installation of signs.

#### 2. PART 2 PRODUCTS

##### 2.1 MANUFACTURERS

- A. Spencer Industries, Inc.
- B. Or approved equal

- C. Engraved Signs: Laminated colored plastic; total thickness of 0.125 inch; bevelled edges; lettering engraved through face material to expose core color. Characters formed to Helvetica style with standard symbol graphics and raised braille meeting current ADA requirements.
- E. Face Color: To be selected by Engineer.
- F. Core Color: To be selected.

## 2..2 ACCESSORIES

- A. Mounting Hardware: Brass screws.
- B. Silicone Mounting Adhesive: Adhesive.

## 3. PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.

### 3..2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install sign on latch side of door as noted on drawings.
- C. Clean and polish.

END OF SECTION

## SECTION 10522

### FIRE EXTINGUISHERS, CABINETS, AND ACCESSORIES

#### 1. PART 1 GENERAL

##### 1..1 WORK INCLUDED

- A. Fire extinguishers.
- B. Cabinets.
- C. Accessories.

##### 1..2 RELATED WORK

- A. Section 06114 - Wood Blocking: Roughed-in wall openings.

##### 1..3 REFERENCES

- A. NFPA 10 - Portable Fire Extinguishers.

##### 1..4 QUALITY ASSURANCE

- A. Conform to NFPA 10 requirements for extinguishers. and fire blankets.

##### 1..5 SUBMITTALS

- A. Submit product data under provisions of Section 01300.
- B. Include physical dimensions, operational features, color and finish, wall mounting brackets with mounted measurements, anchorage details, rough-in measurements, location, and details.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.

##### 1..6 OPERATION AND MAINTENANCE DATA

- A. Submit manufacturer's operation and maintenance data under provisions of Section 01700.
- B. Include test, refill or recharge schedules, procedures, and re-certification requirements. including requirements applicable to the Work.

##### 1..7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperatures may cause freezing.



## 2. PART 2 PRODUCTS

### 2..1 EXTINGUISHERS

- A. Dry Chemical Type: Steel tank, Model Cosmic 10E and Cosmic 5E manufactured by J. L. Industries or equal; with pressure gage, 4A-60BC and 2A-10BC.

### 2..2 CABINETS

- A. Cabinet: Alum, semi-recessed type, size to accommodate accessories. Clear VU Series with clear bubble manufactured by J. L. Industries or approved equal.

### 2..3 Mounting Hardware: Appropriate to cabinet.

### 2..4 FABRICATION

- A. Form body of cabinet with tight inside corners and seams.
- B. Predrill holes for anchorage.
- C. Form perimeter trim and door stiles by welding, filling, and grinding smooth.
- D. Hinge doors for 180 degree opening with two butt continuous piano hinge. Provide nylon roller type catch.
- E. Glaze doors with resilient channel gasket glazing.

### 2..5 FINISHES

- A. Extinguisher: Red enamel.
- B. Cabinet Trim and Door: Anodized to clear color.
- C. Cabinet Interior: white enamel.

### 2.6 QUANTITY

- A. Provide where shown on drawings. Coordinate location with drawings and Engineer.

## 3. PART 3 EXECUTION

### 3..1 INSPECTION

- A. Verify rough openings for cabinet are correctly sized and located.
- B. Beginning of installation means acceptance of existing conditions.

### 3..2 INSTALLATION

- A. Install cabinets plumb and level in wall openings
- B. Secure rigidly in place. in accordance with manufacturer's instructions.

END OF SECTION



## SECTION 10800

### TOILET AND BATH ACCESSORIES

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Toilet and washroom accessories.
- B. Attachment hardware.

##### 1.2 RELATED SECTIONS

- A. Section 06114 – Wood Blocking.

##### 1.3 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible To and Usable by Physically Handicapped People.
- B. ANSI/ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips.
- C. ANSI/ASTM A366 - Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.
- D. ANSI/ASTM A386 - Zinc Coating (Hot-Dip) on Assembled Steel Products.
- E. ANSI/ASTM B456 - Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
- F. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- G. ASTM A269 - Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
- H. NEMA LD-3 - High Pressure Decorative Laminates.

##### 1.4 SUBMITTALS

- A. Submit product data under provisions of Section 013300.
- B. Provide product data on accessories describing size, finish, details of function, attachment methods.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.

##### 1.5 REGULATORY REQUIREMENTS

- A. Conform to code for installing work in conformance with ANSI A117.1.
- 1..6 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

## 2. PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Bobrick
- B. Mockett
- C. Or approved equal

### 2.2 MATERIALS

- A. Fasteners, Screws, and Bolts: Hot dip galvanized and tamperproof.
- B. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

### 2.3 FABRICATION

- A. Weld and grind smooth joints of fabricated components.
- B. Form exposed surfaces from single sheet of stock, free of joints.
- C. Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- D. Back paint components where contact is made with building finishes to prevent electrolysis.
- E. Shop assemble components and package complete with anchors and fittings.
- F. Provide steel anchor plates, adapters, and anchor components for installation.
- G. Hot dip galvanize exposed and painted ferrous metal and fastening devices.

### 2.4 FACTORY FINISHING

- A. Stainless Steel: No. 4 satin luster finish.

## 2. PART 3 EXECUTION

### 2.1 EXAMINATION

- A. Verify that site conditions are ready to receive work and dimensions are as indicated on shop drawings.

- B. Beginning of installation means acceptance of existing conditions.

## 2.2 PREPARATION

- A. Deliver inserts and rough-in frames to site at appropriate time for building-in.
- B. Provide templates and rough-in measurements as required.
- C. Verify exact location of accessories for installation.

## 2.3 INSTALLATION

- A. Install fixtures, accessories and items in accordance with manufacturers' instructions.
- B. Install plumb and level, securely and rigidly anchored to substrate.

## 2.4 GRAB BARS

- A. Shapes as indicated on Drawings. 1 1/4 inch diameter non-slip surface.
  - 1. Manufacturer: Bobrick Washroom Equipment, Inc.
  - 2. Install in each toilet unless noted otherwise.

## 3.5 SCHEDULE

- A. Automatic Wall-mounted Foam Soap Dispenser (B-2013) at each lav
- B. Surface-Mounted Multi-Roll Toilet Tissue Dispenser (B-3588) at each lav
- C. Mirror with Stainless Steel Chanel Frame (B-166) at each lav
- D. Surface-Mounted Sanitary Napkin Disposer (B-270) at each women's toilet
- E. Semi recessed Stainless Steel Disposable Waste Receptacle (B-3944) each bathroom
- F. Coat Hook with Bumper (B-217) on single bathroom door to each toilet stall door

END OF SECTION



## SECTION 12366

### SOLID SURFACE

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. Section Includes:
  - 1. Solid-surface-material countertops and backsplashes.

##### 1.3 ACTION SUBMITTALS

- A. Product Data: For countertop materials.
- B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.
- C. Samples for Initial Selection: For each type of material exposed to view.
- D. Samples for Verification: For the following products:
  - 1. Countertop material, 6 inches square.
  - 2. Wood trim, 8 inches long.
  - 3. One full-size solid-surface-material countertop, with front edge and backsplash, 8 by 10 inches, of construction and in configuration specified.
  - 4. One full-size quartz agglomerate countertop, with front edge and backsplash, 8 by 10 inches, of construction and in configuration specified.

##### 1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

##### 1.5 COORDINATION

- A. Coordinate locations of utilities that will penetrate countertops or backsplashes.



## PART 2 - PRODUCTS

### 2.1 SOLID-SURFACE-MATERIAL COUNTERTOPS

- A. Configuration: Provide countertops with the following front and backsplash style:
  - 1. Front: bullnose Radius edge.
  - 2. Backsplash: Radius edge with 3/8-inch radius.
  - 3. Endsplash: Matching backsplash.
- B. Countertops: 3/4-inch thick, solid surface material with front edge built up with same material.
- B. Backsplashes: 3/4-inch-thick, solid surface material.
- C. Fabrication: Fabricate tops in one piece with shop-applied edges and backsplashes unless otherwise indicated. Comply with solid-surface-material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
  - 1. Fabricate with loose backsplashes for field assembly.

### 2.2 COUNTERTOP MATERIALS

- A. Solid Surface Material: Homogeneous solid sheets of filled plastic resin complying with ANSI SS1.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Avonite Surfaces.
    - b. E. I. du Pont de Nemours and Company.
    - c. Formica Corporation.
    - d. LG Chemical, Ltd.
    - e. Meganite Inc.
    - f. Samsung Chemical USA, Inc.
    - g. Transolid, Inc.
    - h. Wilsonart International.
  - 2. Type: Provide Standard Type or Veneer Type made from material complying with requirements for Standard Type, as indicated unless Special Purpose Type is indicated.
  - 3. Colors and Patterns: As selected by Architect from manufacturer's full range.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install countertops level to a tolerance of 1/8 inch in 8 feet.

- B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
1. Install backsplashes and endsplashes to comply with manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
  2. Seal edges of cutouts in particleboard subtops by saturating with varnish.

END OF SECTION 12366

