



PROJECT MANUAL

**Mosby Center Renovation**

**University of Rhode Island  
Narragansett Bay Campus**

December 1<sup>st</sup>, 2018

03397.000  
BC.G.MSBY.2016.001

Owner: State of Rhode Island Board of Education, University of Rhode Island,  
and State of Rhode Island

In care of: Office of Capital Projects  
University of Rhode Island  
60 Tootell Road – Sherman Building, Kingston, RI 02881  
Attn: Schane M. Tallardy, AIA, NCARB – 401-874-2151

Design Agent: Steffian Bradley Architects  
One Corporate Road, Suite 102  
Enfield, CT 06082  
(860) 627-1920

Consultant: DiPrete Engineering  
90 Broadway  
Newport, RI 02840  
(401) 943-1000

Architectural Engineers  
63 Franklin Street  
Boston, MA 02110  
(617) 542-0810

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### **Mosby Center Renovation**

### **University of Rhode Island Narragansett Bay Campus**

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<b>Cover/Title Sheet</b>		
A000	Cover	12/01/18
<b>Civil</b>		
C010	Site Plan	12/01/18
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M201	Mechanical First Floor Plan	12/01/18

**Electrical**

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ED301	Electrical Power Demolition First Floor	12/01/18
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E201	Electrical Lighting First Floor	12/01/18
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E401	Electrical Fire Alarm First Floor	12/01/18

**END OF DOCUMENT**

**DOCUMENT 00 5200 – AGREEMENT FORM**

**PART 1 – GENERAL**

- 1.1 The Agreement Form to be utilized on this project is AIA Document A101-2017 as amended, a copy of which follows this page.

**END OF DOCUMENT**





# AIA® Document A101™ – 2017

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the date of issuance of the Owner's Purchase Order.

*(Paragraph Deleted)*

**BETWEEN** the Owner:

*(Name, legal status, address, telephone and facsimile numbers, and website)*

**State of Rhode Island One Capitol Hill, Second Floor  
Providence, Rhode Island 02908-5855  
401.578.8100 (telephone); 401.574.8387 (facsimile)**

**acting by and through,  
The University of Rhode Island Purchasing Department  
10 Tootell Road  
Kingston, Rhode Island 02881  
401.874.2171 (telephone); 401.874.2306 (facsimile)  
<http://web.uri.edu/purchasing/>**

**and  
Rhode Island Council on Postsecondary Education  
560 Jefferson Boulevard, Suite 100  
Warwick, Rhode Island 02886  
401.456.6000 (telephone); 401.732.3541 (facsimile)**

on behalf of the User Agency:  
*(Name, legal status, address, telephone and facsimile numbers, and website)*

**The University of Rhode Island  
Office of Capital Projects  
60 Tootell Road – Sherman Building  
Kingston, Rhode Island 02881  
401.874.2725 (telephone)**

and the Contractor:  
*(Name, legal status, address, telephone and facsimile numbers, and website)*

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

### ADDITIONS AND DELETIONS:

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

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

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

The Design Agent:

Init.

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**User Notes:**

(3B9ADA3B)

| (Name, legal status, address, telephone and facsimile numbers, and website)

The Owner and Contractor agree as follows.



Init.

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User Notes:

(3B9ADA3B)

| (Paragraph Deleted)

| The Owner and Contractor agree as follows.

**TABLE OF ARTICLES**

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

**EXHIBIT A INSURANCE AND BONDS**

**ARTICLE 1 THE CONTRACT DOCUMENTS**

| The Contract Documents consist of this Agreement, Conditions of the Contract (General Conditions, Supplementary Conditions (if any), and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

**ARTICLE 2 THE WORK OF THIS CONTRACT**

| The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others. No part of the Work shall be performed by Subcontractors without the Owner's prior written consent.

**ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

| **§ 3.1** The date of commencement of the Work shall  
| be the later of: (i) the issuance of the Purchase Order by the Owner; and (ii) the  
| (Paragraph Deleted)

| date set forth in a notice to proceed issued by the User Agency.

| (Paragraphs Deleted)

**§ 3.2** The Contract Time shall be measured from the date of commencement of the Work.

**§ 3.3 Substantial Completion**

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

(Check one of the following boxes and complete the necessary information.)

[ ] Not later than ( ) calendar days from the date of commencement of the Work.

Init.

[ ] By the following date:

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

**Portion of Work**

**Substantial Completion Date**

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

**ARTICLE 4 CONTRACT SUM**

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. Subject to additions and deductions as provided in the Contract Documents, the Contract Sum shall be: \$ \_\_\_\_\_.

**§ 4.2 Alternates**

§ 4.2.1 Alternates, if any, included in the Contract Sum:

**Item**

**Price**

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

**Item**

**Price**

**Conditions for Acceptance**

§ 4.3 Allowances, if any, are specified in the Bid Proposal Form and are included in the Contract Sum.

*(Paragraph Deleted)*

*(Table Deleted)*

**§ 4.4 Unit prices, if**

*any, are specified in the Bid Proposal Form and include all costs, including without limitation, labor, materials, services, regulatory compliance, overhead, and profit necessary for the completion of the Work. Unit prices shall be used for both additions to, and deletions from the Work.*

*(Table Deleted)*

**§ 4.5 Liquidated damages, if any:**

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

.1 In the event that there is one date for Substantial Completion of the Work, the Contractor shall pay the Owner the sum stipulated in this Section 4.5.1 as liquidated damages, and not as a penalty, for each calendar day of delay until the Work is substantially complete: \$ \_\_\_\_\_.

.2 In the event that the Project is scheduled to be completed in phases, and there is more than one date for Substantial Completion of the Work, the Contractor shall pay the Owner an aggregate amount equal to the sums stipulated in this Section 4.5.2 as liquidated damages, and not as a penalty, for each calendar day of delay until the Work for each phase is substantially complete:

Init.

Phase	Liquidated Damages Sum
-------	------------------------

.3 The Owner and the Contractor have reasonably determined the sums set forth in this Section 4.5 to be a fair estimate of the Owner' actual damages which are difficult to ascertain in the event of delay.

**§ 4.6 Other:**  
*(Paragraph Deleted)*

The Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work.

**ARTICLE 5 PAYMENTS**

**§ 5.1 Progress Payments**

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

**§ 5.1.2** The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

**§ 5.1.3** The Owner shall make payment of the certified amount, less retainage, to the Contractor not later than the 30<sup>th</sup> working day following written approval by the Owner.

*(Paragraph Deleted)*

**§ 5.1.4** Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor and approved by the Design Agent and the Owner in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Design Agent and the Owner may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

**§ 5.1.5** Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

**§ 5.1.6** In accordance with AIA Document A201™–2007, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

**§ 5.1.6.1** The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Design Agent determines, in the Design Agent's professional judgment, to be reasonably justified.

**§ 5.1.6.2** The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Design Agent has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2007;
- .3

Init.

- For Work performed or defects discovered since the last payment application, any amount for which the Design Agent may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2007; and
- 4 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due: five (5%) percent.

*(Paragraph Deleted)*

§ 5.1.7.1.1  
*Deleted.*

§ 5.1.7.2 Deleted.

*(Paragraph Deleted)*

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

*(Insert any other conditions for release of retainage upon Substantial Completion.)*

The amount of five (5%) percent shall be retained by the Owner until the first anniversary of final completion of the Work.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2007.

§ 5.1.9 Except with the Owner’s prior written approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

**§ 5.1.10 Within 10 working days of receipt of any progress payment from the Owner, the Contractor must pay its Subcontractors the full amount included for each such Subcontractor within the Contractor’s Application for Payment in accordance with the provisions of AIA A201 – 2007, General Conditions of the Contract for Construction.**

### § 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, less the amount withheld pursuant to § 5.1.7.3, 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 Article 12 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- 2 a final Certificate for Payment has been issued by the Design Agent and approved in writing by the Owner;
- 3 the Contractor has submitted its final release and final releases from all of its Subcontractors and suppliers in a form acceptable to the Owner; and
- 4 the Contractor has submitted to the Owner all close-out documents, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 working days after the issuance of the Design Agent’s final Certificate for Payment and written approval by the Owner.

### § 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due in accordance with the provisions of “Prompt Payment by Department of Administration,” R.I. Gen. Laws §§ 42-11.1-1 et seq.

Init.



## **§ 5.4 Owner's Rights**

**§ 5.4.1** The Owner shall have the right to deduct from any payments due to the Contractor the amount of any unpaid obligations owed to the State of Rhode Island by the Contractor, including without limitation, any and all unpaid taxes, the amount of any claim against the Contractor arising out of this Agreement, or any amount on account of any other reason permitted by applicable law.

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

Claims shall be referred to the Initial Decision Maker for initial decision. The University of Rhode Island Vice President for Administration and Finance pursuant to the provisions of the "Delegation of Limited Procurement Authority," dated January 19, 2018 and the provisions of the "State Purchases Act," R.I. Gen. Laws § 37-2-1 et seq., will serve as the Initial Decision

*Maker in accordance with the provisions of the State Purchases Act, State of Rhode Island Procurement Regulations, and this Section 6.1. An initial decision shall be required as a condition precedent to binding dispute resolution pursuant to Section 6.3 of any Claim arising prior to the date final payment is due.*

### **§ 6.2 Mediation**

For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 6.1, and prior to the implementation of the binding dispute resolution procedures set forth in Section 6.3, the Contractor shall have the

option to pursue mediation, exercisable by written notice to the Owner within 30 calendar days of an Initial Decision. In the event of the exercise of such option by the Contractor, the Owner and the Contractor shall attempt to select a mediator, and in the event that the Owner and the Contractor cannot agree on a mediator, either party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by both parties.

*(Paragraph Deleted)*

### **§ 6.3 Binding Dispute Resolution**

For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 6.1, or mediation at the option of the Contractor pursuant to Section 6.2, the method of binding dispute resolution shall be determined in accordance with the provisions of the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq.

## **ARTICLE 7 TERMINATION OR SUSPENSION**

**§ 7.1** The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007. The Contract may also be terminated by the Owner: (i) in the event of the unavailability of appropriated funds; (ii) in the absence of a determination of continued need; or (iii) as otherwise provided in the State of Rhode Island Procurement Regulations General Conditions of Purchase or other applicable law.

### **§ 7.1.1 Deleted.**

**§ 7.2** The Work may be suspended by the Owner as provided in: (i) the State of Rhode Island General Conditions of Purchase Regulation or other applicable law; or (ii) Article 14 of AIA Document A201–2007.

## **ARTICLE 8 MISCELLANEOUS PROVISIONS**

**§ 8.1** Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to: (i) the AIA Document A201 – 2007 or other Contract Document as modified by the Owner; and (ii) that provision in the AIA Document A201 – 2007 or other Contract Document as amended or supplemented by other provisions of the Contract Documents.

### **§ 8.2 Representatives for the Owner**

**§ 8.2.1** The Owner's representative:

Init.

*(Name, title, address, email address, and other information for the preferred methods of contact)*

**The University of Rhode Island, Purchasing Department**  
**10 Tootell Road**  
**Kingston, Rhode Island 02881**  
**Paul M. DePace, PE**  
**401.874.2725 (telephone)**

**§ 8.2.2** The User Agency's representative:

*(Name, title, address, email address, and other information for the preferred methods of contact)*

**The University of Rhode Island**  
**Office of Capital Projects**  
**60 Tootell Road – Sherman Building**  
**Kingston, Rhode Island 02881**  
**Paul M. DePace, PE**  
**401.874.2725 (telephone)**

**§ 8.2.3** The Design Agent's representative:

*(Name, title, address, email address, and other information for the preferred methods of contact)*

**§ 8.3** The Contractor's representative:

*(Name, title, address, email address, and other information for the preferred methods of contact)*

**§ 8.4** Neither the Owner's nor the Contractor's representative nor the Design Agent's representative shall be changed without 10 working days' prior notice to the other party.

**§ 8.5 Insurance and Bonds**

**§ 8.5.1** The Owner and the Contractor shall purchase and maintain insurance as set forth in the Solicitation and elsewhere in the Contract Documents.

**§ 8.5.2** The Contractor shall provide bonds as set forth in the Solicitation and elsewhere in the Contract Documents.

**§ 8.6 Deleted.**

**§ 8.7** Other provisions:

**§ 8.7.1** The Contractor represents and warrants to the Owner, in addition to any other representations and warranties of the Contractor elsewhere in the Contract Documents:

.1 The Contractor and its Subcontractors are each financially solvent, able to pay their debts as they mature, and possess sufficient working capital to perform their obligations under the Contract Documents.

Init.



.2 The Contractor and its Subcontractors are each able to furnish the tools, materials, equipment, and labor required to complete the Project as required under the Contract Documents.

.3 *The Contractor and each Subcontractor are authorized to do business in the State of Rhode Island and are properly licensed by all necessary governmental authorities having jurisdiction over them and over the Work and the Project.*

.4 The execution of this Agreement and its performance is within its duly authorized powers.

.5 The Contractor has visited the site of the Project, familiarized itself with the local and special conditions under which the Work is to be performed, and correlated its observations with the requirements of the Contract Documents.

.6 The Contractor possesses the requisite level of experience and expertise in the business administration, construction, and superintendence of projects of the size, complexity, and nature of the Project, and it will perform the Work with the care, skill, and diligence of a contractor possessing such experience and expertise.

§ 8.7.2 The representations and warranties of the Contractor in this Section 8.7 and elsewhere in the Contract Documents will survive the execution and delivery of this Agreement, any termination of this Agreement, and the final completion of the Work.

§ 8.7.3 Any Change Orders or other Modifications must be approved in writing by the Owner.

§ 8.7.4 The Owner is the State of Rhode Island, acting by and through the University of Rhode Island Purchasing Department, and therefore, pursuant to the provisions of R.I. Gen. Laws § 34-28-31, mechanics liens may not be placed against the Project.

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, as modified by the Owner
- .2 **Deleted.**
- .3 AIA Document A201™–2007, General Conditions of the Contract for Construction, as modified by the Owner.
- .4 **Deleted.**
- .5 Drawings

*(Table Deleted)*

The Drawings are included in the Solicitation and are available on the Division of Purchases website at [www.purchasing.ri.gov](http://www.purchasing.ri.gov).

- .6 Specifications

*(Table Deleted)*

The Specifications are included in the Solicitation and are available on the Division of Purchases website at [www.purchasing.ri.gov](http://www.purchasing.ri.gov).

- .7 Addenda, if

*(Table Deleted)*

any, issued pursuant to the Solicitation form a part of the Solicitation and are available on the Division of Purchases website at [www.purchasing.ri.gov](http://www.purchasing.ri.gov).

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*Supplementary and other Conditions of the Contract, including without limitation, the State of Rhode Island General Conditions of Purchase Regulation.*

.9 Other documents listed below:

*(Paragraph Deleted)*

.1 The Solicitation, issued by the Owner, including without limitation, the Invitation to Bid, the Instructions to Bidders, the Specifications and Drawings, any Addenda, and the Bid Checklist.

*(Paragraph Deleted)*

.2 The Bid Proposal, including without limitation, the Bid Form and the Bidder Certification Cover Form.

*(Table Deleted)*

.3 The Purchase Order issued by the Owner.

**§ 9.2** This Agreement and the Contract Documents are subject to, and governed by, the laws of the State of Rhode Island, including all procurement statutes and regulations (available at [www.purchasing.ri.gov](http://www.purchasing.ri.gov)), and applicable federal and local law, all of which are fully incorporated into this Agreement by this reference.

*(Table Deleted)*

*(Paragraph Deleted)*

**§ 9.3** *In the event of any conflict between or among the Contract Documents, or any Contract Documents and any provision of the State of Rhode Island Procurement Regulations and/or any other provision of the Rhode Island General Laws, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws shall control.*

## **ARTICLE 10 BENEFITS OF AGREEMENT**

**§ 10.1** The User Agency is a disclosed third-party beneficiary of this Agreement and shall have all of the rights and benefits hereunder to which such a party is entitled. Nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, any other third party against the Owner or the User Agency.

**§ 10.2** This Agreement shall be binding on the Contractor and its successors and assigns; provided, however, that the Contractor may not assign its rights nor delegate its responsibilities under this Agreement without the Owner's prior written consent.

This Agreement is entered into as of the day and year first written above; provided, however, that this Agreement shall not become a valid, binding, and enforceable contract unless and until the Owner shall have issued a Purchase Order.

**THE STATE OF RHODE ISLAND, acting by  
and through THE UNIVERSITY OF RHODE  
ISLAND PURCHASING DEPARTMENT and  
RHODE ISLAND COUNCIL ON  
POSTSECONDARY EDUCATION**

---

**OWNER** *(Signature)*

---

*(Printed name and title)*

---

**CONTRACTOR** *(Signature)*

---

*(Printed name and title)*



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**DOCUMENT 00 6140 - WAIVER OF LIEN FORM**

U. R. I. Document Waiver of Lien Form is included, following this page, as an integral part of the Contract documents. A copy with completed information must be submitted with the second and each succeeding Application for Payment.

UNIVERSITY OF RHODE ISLAND

---

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

General Contractor: \_\_\_\_\_

Subcontractor/Supplier: \_\_\_\_\_

DUNS No.: \_\_\_\_\_

Application and Certificate for Payment No: \_\_\_\_\_  
(prior to Application accompanying this form)

Schedule of Values Line Item No.: \_\_\_\_\_

DESCRIPTION OF WORK Heading: \_\_\_\_\_

Total payment Received, Including Current Payment: \$ \_\_\_\_\_

The undersigned Representative of the above Subcontractor/Supplier has been contracted by the above General Contractor to furnish materials, or labor, or both, as included in the approved Schedule of Values under the Line Item No.\_\_\_\_, and DESCRIPTION OF WORK heading indicated above, for the Construction Project listed above.

The undersigned acknowledges receipt of payment, under this Line Item No., and DESCRIPTION OF WORK heading, and hereby waives and releases any and all lien, or claim or right to lien, on the Construction Project listed above, and premises, under the statutes of the State of Rhode Island, relating to Mechanics Liens, on account of materials, or labor, or both, furnished, or which may be furnished, by the undersigned to, or on account of, the above numbered Application and Certificate for Payment.

Signed on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(firm name)

**END OF DOCUMENT**

**DOCUMENT 00 7000 – GENERAL CONDITIONS**

**PART 1 – GENERAL**

- 1.1 The General Conditions to be utilized on this project is AIA Document A201-2007 as amended, a copy of which follows this page.

**END OF DOCUMENT**



# AIA<sup>®</sup> Document A201<sup>™</sup> – 2007

## General Conditions of the Contract for Construction

for the following PROJECT:

*(Name and location or address)*

### THE OWNER:

*(Name, legal status and address)*

State of Rhode Island  
One Capitol Hill, Second Floor  
Providence, Rhode Island 02908-5855  
(401) 574-8100 (telephone)  
(401) 574-8387 (facsimile)

*(Paragraphs deleted)*

acting by and through

*(Paragraphs deleted)*

The University of Rhode Island Purchasing Department

*(Paragraphs deleted)*

10 Tootell Road  
Kingston, Rhode Island 02881  
(401) 874-2171 (telephone)  
(401) 874-2306 (facsimile)  
<http://web.uri.edu/purchasing/>

*(Paragraph deleted)*

and

Rhode Island Council on Postsecondary Education  
560 Jefferson Boulevard, Suite 100  
Warwick, Rhode Island, 02886  
(401) 456-6000 (telephone)  
(401) 732-3541 (facsimile)  
On behalf of the User Agency

### THE USER AGENCY

*(Paragraphs deleted)*

*(Name, address, telephone and facsimile numbers, and web address)*

The University of Rhode Island

*(Paragraphs deleted)*

Office of Capital Projects

*(Paragraphs deleted)*

60 Tootell Road – Sherman Building  
Kingston, Rhode Island 02881

*(Paragraphs deleted)*

(401) 874-2725 (telephone)

*(Paragraphs deleted)*

### ADDITIONS AND DELETIONS:

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

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

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**User Notes:**

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**THE Design Agent:**

*(Paragraphs deleted)*

*(Name, legal status, address, telephone and facsimile numbers, and web address)*

**TABLE OF ARTICLES**

**1 GENERAL PROVISIONS**

**2 OWNER**

**3 CONTRACTOR**

**4 DESIGN AGENT**

**5 SUBCONTRACTORS**

*(Paragraphs deleted)*

**6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

*(Paragraphs deleted)*

**7 CHANGES IN THE WORK**

**8 TIME**

*(Paragraphs deleted)*

**9 PAYMENTS AND COMPLETION**

*(Paragraphs deleted)*

**10 PROTECTION OF PERSONS AND PROPERTY**

*(Paragraph deleted)*

**11 INSURANCE AND BONDS**

**12 UNCOVERING AND CORRECTION OF WORK**

*(Paragraphs deleted)*

**13 MISCELLANEOUS PROVISIONS**

*(Paragraphs deleted)*

**14 TERMINATION OR SUSPENSION OF THE CONTRACT**

*(Paragraphs deleted)*

**15 CLAIMS AND DISPUTES**

*(Paragraphs deleted)*



## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 BASIC DEFINITIONS

#### § 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (the Agreement) and consist of the Agreement (and the documents enumerated therein), Conditions of the Contract (General Conditions, Supplementary Conditions, if any, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Design Agent.

#### § 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Design Agent or the Design Agent's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Design Agent or the Design Agent's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Design Agent shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Design Agent's duties.

#### § 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### § 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

#### § 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

#### § 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### § 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Design Agent and the Design Agent's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### § 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items and services 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; the Contractor shall perform all work reasonably inferable from the Contract Documents as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

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§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 In the event of any conflicts or discrepancies among the Contract Documents, the provisions of the Contract Documents will be interpreted in the following order of priority:

- .1 Modifications (if any).
- .2 The Purchase Order.
- .3 The Agreement.
- .4 The Solicitation, including any Addenda, and the Specifications and Drawings
- .5 The Supplementary Conditions (if any).
- .6 The General Conditions.
- .7 The Bid Proposal.

§ 1.2.5 In the event of any conflicts or discrepancies between the Contract Documents and the State of Rhode Island Procurement Regulations or any provision of the Rhode Island General Laws, the State of Rhode Island Procurement Regulations and the Rhode Island General Laws will control.

§ 1.2.6 In the event of any inconsistency between the Drawings and Specifications, the better quality or greater quantity of Work shall be provided.

§ 1.2.7 The Owner will be the final decision maker for any and all interpretations.

### § 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

### § 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Owner and the User Agency shall have a perpetual license to utilize the Drawings, Specifications, and other documents, including electronic or digital documents, prepared by the Design Agent and the Design Agent's consultants, for the execution of the Project and shall have and retain all rights to use them and reproduce them for the production and maintenance of the Work described therein. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment 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 this Project is not to be construed as publication in derogation of the Design Agent's or Design Agent's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them 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 material or equipment 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, Design Agent and the Design Agent's consultants.

### § 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## ARTICLE 2 OWNER

### § 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express

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authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Design Agent does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2 Deleted.**

**§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**§ 2.2.1 Deleted.**

**§ 2.2.2** The Contractor shall secure and pay for permits and fees, necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

**§ 2.2.3** If required for the Work in the discretion of the Owner, the Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of any information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.2.4** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.2.5 Deleted.**

**§ 2.3 OWNER'S RIGHT TO STOP THE WORK**

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

**§ 2.4 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 10 working-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Design Agent's additional services made necessary by such default, neglect, or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Design Agent. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

**ARTICLE 3 CONTRACTOR**

**§ 3.1 GENERAL**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Design Agent, or by tests, inspections, or approvals required or performed by persons or entities other than the Contractor.

### § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, 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 Owner and the Design Agent any errors, inconsistencies, or omissions discovered by or made known to the Contractor or additional Drawings, Specifications, or instructions required to define the Work in greater detail to permit the proper progress of the Work as a request for information in such form as the Design Agent may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.3.1 Omissions from the Drawings and Specifications of items obviously needed to perform the Work properly, such as attachments, bolts, hangers, and other fastening devices, shall not relieve the Contractor from the obligation to furnish and install such items.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Design Agent issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2, 3.2.3, or 3.2.3.1, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Design Agent for damages resulting from errors, inconsistencies, or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.2.4.1 The Contractor shall not make any changes without prior written authorization from the Design Agent and the Owner.

§ 3.2.5 The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

### § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Design Agent and shall not proceed with that portion of the Work without further written instructions from the Design Agent. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without



acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 3.4 LABOR AND MATERIALS**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work. Whenever the Contractor has an obligation to provide labor and materials under the Agreement, the Contractor, at a minimum, shall provide the labor for, and furnish and install and place in operation all items, including without limitation, all proper connections.

**§ 3.4.2** Except in the case of minor changes in the Work authorized by the Design Agent in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Design Agent and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### **§ 3.5 WARRANTY**

The Contractor warrants to the Owner and the Design Agent that materials and equipment furnished under the Contract will be of first quality, prime manufacture, 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, including substitutions not properly authorized, may be considered defective and, unless a longer period is required elsewhere in the Contract Documents, will be repaired and/or replaced, at the option of the Owner, for a period of one year following Final Completion of the Work. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Design Agent, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **§ 3.6 TAXES**

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

**§ 3.6.2** The State of Rhode Island is exempt from payment of any federal or state excise, transportation, or sales tax. The Rhode Island Department of Administration Division of Purchases will furnish Exemption Certificates upon request.

**§ 3.6.3** Pursuant to R.I. Gen. Laws § 44-1-6, the Owner shall withhold payment from the Contractor if the Contractor does not maintain a regular place of business in Rhode Island in the amount of three (3%) percent of the Contract Sum until 30 calendar days after Final Completion and compliance by the Contractor with the requirements of such section.

### **§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections required by the Rhode Island State Building Code

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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. The Contractor shall be responsible for obtaining the Certificate of Occupancy from the appropriate governmental authorities.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** The Contractor shall promptly notify the Design Agent and the Owner if the Contractor becomes aware that the Contract Documents are not in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Design Agent before conditions are disturbed and in no event later than 21 working days after first observance of the conditions. The Design Agent will promptly investigate such conditions and, if the Design Agent determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Agent determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Agent shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Design Agent's determination or recommendation, that party may proceed as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Design Agent. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### **§ 3.8 ALLOWANCES**

**§ 3.8.1** The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

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

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

### **§ 3.9 SUPERINTENDENT**

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

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**§ 3.9.2** The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Design Agent the name and qualifications of a proposed superintendent. The Design Agent may reply within 14 working days to the Contractor in writing stating (1) whether the Owner or the Design Agent has reasonable objection to the proposed superintendent or (2) that the Design Agent requires additional time to review. Failure of the Design Agent to reply within the 14 working-day period shall constitute notice of no reasonable objection.

**§ 3.9.3** The Contractor shall not employ a proposed superintendent to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### **§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

**§ 3.10.1** The Contractor, within 20 working days after the issuance of the Purchase Order, shall prepare and submit for the Owner's and Design Agent'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, not less frequently than monthly, as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The Contractor shall certify on the initial schedule and all revised schedules that they comply with the Contract Documents.

**§ 3.10.2** The Contractor shall prepare a submittal schedule, within 20 working days after the issuance of the Purchase Order, and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Owner's and the Design Agent's approval. The Owner's and the Design Agent's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Owner and the Design Agent reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

**§ 3.10.3** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Design Agent.

### **§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Design Agent and shall be delivered to the Design Agent for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### **§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

**§ 3.12.1** Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

**§ 3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**§ 3.12.3** Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

**§ 3.12.4** Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Design Agent is subject to the limitations of Section 4.2.7. Informational submittals upon which the Design Agent is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Design Agent without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve and submit to the Design Agent Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Owner and the Design Agent or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Design Agent that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Design Agent.

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Design Agent's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Design Agent in writing of such deviation at the time of submittal and (1) the Design Agent has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Design Agent's approval thereof.

**§ 3.12.9** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Design Agent on previous submittals. In the absence of such written notice, the Design Agent's approval of a resubmission shall not apply to such revisions.

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Design Agent will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Design Agent. The Owner and the Design Agent shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Design Agent have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Design Agent will review, approve, or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

**§ 3.12.11** The Owner shall be entitled to reimbursement from the Contractor for amounts paid to the Design Agent for evaluation of resubmittals.

### **§ 3.13 USE OF SITE**

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



### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

### § 3.16 ACCESS TO WORK

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

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Design Agent harmless from loss on account thereof, but shall not be responsible for such 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 Design Agent. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Design Agent and the Owner.

### § 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, the State of Rhode Island, and each executive, legislative, judicial, regulatory, and administrative body of the state, and any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, committee, authority, educational institution, school, water, and fire district, and other agency of Rhode Island state, municipal, and local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic, including without limitation, the User Agency, their elected and appointed officials, members, employees, and agents, the Design Agent, the Design Agent's Consultants, Subconsultants, and Subcontractors, and agents and employees and any of them from and against any and all claims, demands, damages, liabilities, judgments, losses and expenses, including but not limited to attorneys' fees and costs of mediation, arbitration, and/or litigation, arising out of or resulting from performance of the Work, and/or the obligations of the under the Contract Documents, but only to the extent caused by the 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 any such claim, demand, damage, liability, judgment, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

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

compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

**§ 3.18.3** Without limiting the generality of the foregoing, the defense and indemnity set forth in this Section 3.18 includes, without limitation, all liabilities, damages, losses, claims, demands, and actions on account of bodily injury, death, or property loss to a person or entity indemnified hereunder or any other persons or entities, whether based upon statutory (including, without limitation, workers compensation), contractual, tort, or other liability of any person or entity so indemnified.

**§ 3.18.4** The remedies set forth herein shall not deprive any person indemnified hereunder of any other indemnity action, right, or remedy otherwise available to any such person or entity at common law or otherwise.

**§ 3.18.5** The Contractor will include the indemnity set forth in this Section 3.18, without modification, in each Subcontract with any Subcontractor.

**§ 3.18.6** Notwithstanding any other language in the Contract Documents to the contrary, the indemnity hereunder shall survive Final Completion of the Work and final payment under the Agreement and shall survive any termination of the Agreement.

#### **ARTICLE 4 DESIGN AGENT**

##### **§ 4.1 GENERAL**

**§ 4.1.1** The Design Agent is the person lawfully licensed to practice his or her profession in the State of Rhode Island or an entity lawfully practicing its profession in the State of Rhode Island and identified in the Contract Documents as the Design Agent. The term "Design Agent" means the Design Agent or the Design Agent's authorized representative.

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

**§ 4.1.3** If the employment of the Design Agent is terminated, the Owner shall employ a successor Design Agent as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Design Agent.

##### **§ 4.2 ADMINISTRATION OF THE CONTRACT**

**§ 4.2.1** The Owner with assistance from the Design Agent will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction through the date the Design Agent issues the final Certificate for Payment and continuing until the expiration of the warranty period in Section 3.5. The Design Agent will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Design Agent will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Design Agent will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Design Agent will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

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

**§ 4.2.3** On the basis of the site visits, the Design Agent will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Design Agent will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Design Agent will not have control

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over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### **§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION**

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Design Agent about matters arising out of or relating to the Contract. Communications by and with the Design Agent's consultants shall be through the Design Agent. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

**§ 4.2.5** Based on the Design Agent's evaluations of the Contractor's Applications for Payment, the Design Agent will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**§ 4.2.6** The Design Agent has authority to reject Work that does not conform to the Contract Documents. Whenever the Design Agent considers it necessary or advisable, the Design Agent will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Design Agent nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Design Agent to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

**§ 4.2.7** The Design Agent will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Design Agent's action will be taken in accordance with the submittal schedule approved by the Design Agent or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Design Agent's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Design Agent's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Design Agent's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Design Agent, of any construction means, methods, techniques, sequences or procedures. The Design Agent's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

**§ 4.2.8** The Design Agent will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Design Agent will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Design Agent will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 4.2.10** If the Owner and Design Agent agree, the Design Agent will provide one or more project representatives to assist in carrying out the Design Agent's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

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

**§ 4.2.12** Interpretations and decisions of the Design Agent will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Design Agent will endeavor to secure faithful performance by both Owner and

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Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

**§ 4.2.13** The Design Agent's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents and approved by the Owner.

**§ 4.2.14** The Design Agent will review and respond to requests for information about the Contract Documents. The Design Agent's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Design Agent will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 DEFINITIONS**

**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### **§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

**§ 5.2.1** Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner and the Design Agent the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Owner may reply within 14 working days to the Contractor in writing stating (1) whether the Owner or the Design Agent has reasonable objection to any such proposed person or entity or (2) that the Owner or Design Agent requires additional time for review.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner or Design Agent has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Agent has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Design Agent makes reasonable objection to such substitution.

### **§ 5.2.5 MANUFACTURERS AND FABRICATORS**

**§ 5.2.5.1** Not later than 10 working days after the date of commencement of the Work, the Contractor shall furnish in writing to the Owner and the Design Agent the names of the manufacturers or fabricators for certain products, equipment, and systems identified in the Specifications and, where applicable, the name of the installing Subcontractor. The Owner may reply within 14 working days to the Contractor in writing, stating: (i) whether the Owner or the Design Agent has reasonable objection to any such proposed person manufacturer or fabricator; or (ii) whether the Owner or Design Agent requires additional time to review.

**§ 5.2.5.2** The Contractor shall not contract with a proposed manufacturer, fabricator, or Subcontractor to whom the Owner or Design Agent has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

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§ 5.2.5.3 If the Owner or Design Agent has an objection to a manufacturer, fabricator, or Subcontractor proposed by the Contractor, the Contractor shall propose another to whom the Owner or Design Agent has no objection.

§ 5.2.5.4 The Contractor shall not substitute a manufacturer, fabricator, or Subcontractor previously selected if the Owner or Design Agent makes reasonable objection to such substitution.

### § 5.3 SUBCONTRACTUAL RELATIONS

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Design Agent. Upon the request of the User Agency and/or the Owner, the Contractor shall provide the User Agency and/or the Owner with copies of each subcontract agreement. Each subcontract agreement shall preserve and protect the rights of the Owner and Design Agent under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

*(Paragraph deleted)*

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 working days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

## ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

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

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

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

## § 6.2 MUTUAL RESPONSIBILITY

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Design Agent apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

## § 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and allocate the cost among those responsible.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement between the Owner and the Contractor; a Construction Change Directive requires agreement by the Owner and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Design Agent alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

### § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Contractor and signed by the Owner, Contractor and Design Agent stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Subsequent to the approval of a Change Order as provided in § 7.1.2, whether such Change Order changes the Contract Sum or Contract Time or both, no additional claim related to such Change Order will be considered by the

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Owner. Any change, once incorporated into a Change Order, is all inclusive, and includes all factors that could have been considered at the time of the Change Order such as Project impact or schedule "ripple" effect.

### § 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Design Agent and signed by the Owner, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 Deleted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Design Agent of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Design Agent shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.3.1. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Design Agent may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of delivery;
- .3 Rental costs of machinery and equipment, exclusive of hand tools; or
- .4 Costs of premiums for all bonds and insurance and permit fees related to the Work..

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Design Agent. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Design Agent will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Design Agent determines, in the Design Agent's professional judgment, to be reasonably justified. The Design Agent's interim determination of cost shall adjust the Contract Sum on the same

basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the Design Agent concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Contractor will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

**§ 7.3.11** The combined overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:

- .1 For the Contractor, for work performed by the Contractor's own forces, an amount not to exceed ten (10%) percent of the cost.
- .2 For the Contractor, for work performed by the Contractor's Subcontractors, an amount not to exceed five (5%) of the amount due to the Subcontractors.
- .3 For each Subcontractor, for work performed by the Subcontractor's own forces, an amount not to exceed ten (10%) percent of the cost.
- .4 Where the Work represents both additions and deletions and results in a net increase, the allowable overhead and profit shall be in accordance with this Section 7.3.11, but in no event shall the amount exceed fifteen (15%) percent of the net increase in the cost of the Work.

**§ 7.3.12** All proposals with an aggregate cost equal to or in excess of \$500.00 shall be accompanied by a detailed itemization of costs, including labor, materials (quantities and prices), and Subcontracts, in a form acceptable to the Owner. In no event will a change order request reflecting an aggregate cost equal to or in excess of \$500.00 be approved without such itemization.

#### **§ 7.4 MINOR CHANGES IN THE WORK**

The Design Agent with the prior written approval of the Owner has 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 will be affected by written order signed by the Design Agent and shall be binding on the Owner and Contractor.

### **ARTICLE 8 TIME**

#### **§ 8.1 DEFINITIONS**

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

The date of commencement of the Work is the date established in Section 3.1 of the Agreement..

*(Paragraph deleted)*

**§ 8.1.3** The date of Substantial Completion is the date certified by the Design Agent in accordance with Section 9.8.

**§ 8.1.4 Deleted.**

#### **§ 8.2 PROGRESS AND COMPLETION**

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

**§ 8.2.2** The Contractor shall not except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.



### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Design Agent, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, then the Contract Time shall be extended by Change Order for such reasonable time as the Owner may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

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

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

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

### § 9.2 SCHEDULE OF VALUES

Within 20 working days of the issuance of the Purchase Order, and promptly if revision is necessary from time to time as a result of a Change Order, the Contractor shall submit to the Owner, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Design Agent and the Owner may require. This schedule, if and when approved by the Design Agent and the Owner in writing, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least 10 working days before the date established for each progress payment, the Contractor shall submit to the Design Agent and the Owner for approval an itemized Application for Payment prepared in accordance with the schedule of values for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or the Design Agent may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 All Applications for Payment for Change Orders must be accompanied by a Notice of Change in Purchase Order issued by the Owner, and if directed by the Owner, by the User Agency.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 The form of Application for Payment shall be AIA Document G702, Application and Certification for Payment, supported by AIA Document G702A, Continuation Sheet.

§ 9.3.1.4 Until final payment, the Owner shall pay ninety-five (95%) percent of the amount due the Contractor on account of progress payments.

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

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be

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free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor shall immediately satisfy any lien, claim, or encumbrance against the site where the Project is located and indemnify the Owner from and against all resulting costs and expenses, including without limitation, attorneys' fees.

#### **§ 9.4 CERTIFICATES FOR PAYMENT**

**§ 9.4.1** The Design Agent will, within 7 working 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 Design Agent determines is properly due, or notify the Contractor and Owner in writing of the Design Agent's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Design Agent to the Owner, based on the Design Agent's evaluation of the Work and the data comprising the Application for Payment, that, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. 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 Design Agent. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Design Agent 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 material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

**§ 9.4.3** The Contractor must submit all product literature, material and color samples with each Application for Payment, or as otherwise required by the Owner.

#### **§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION**

**§ 9.5.1** The Design Agent will withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Design Agent's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Design Agent is unable to certify payment in the amount of the Application, the Design Agent will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Design Agent cannot agree on a revised amount, the Design Agent will promptly issue a Certificate for Payment for the amount for which the Design Agent is able to make such representations to the Owner. The Design Agent 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 Design Agent's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or 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;
- .7 failure to carry out the Work in accordance with the Contract Documents; or
- .8 any other failure to comply with the obligations of the Contractor under the Contract Documents.

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

**§ 9.5.3** If the Design Agent withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the

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Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Design Agent and the Design Agent will reflect such payment on the next Certificate for Payment.

## **§ 9.6 PROGRESS PAYMENTS**

**§ 9.6.1** After the Design Agent has issued a Certificate for Payment and the Owner has approved the Certificate for Payment in writing, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Design Agent.

**§ 9.6.2** The Contractor shall pay each Subcontractor no later than 10 working days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 9.6.3** The Design Agent will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Design Agent and Owner on account of portions of the Work done by such Subcontractor.

**§ 9.6.4** The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within 7 working days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. The Owner shall have the right to withhold payment(s) to the Contractor in the event that any Subcontractors or material and equipment suppliers have not been properly paid. Neither the Owner nor Design Agent shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

**§ 9.6.5** Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

**§ 9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.7** Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

## **§ 9.7 FAILURE OF PAYMENT**

If the Design Agent does not issue a Certificate for Payment, through no fault of the Contractor, within 7 working days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within 7 working days after the date established in the Contract Documents the amount certified by the Design Agent or awarded by binding dispute resolution, then the Contractor may, upon 7 additional working days' written notice to the Owner and Design Agent, make a claim for payment as provided under the provisions of applicable law.

## **§ 9.8 SUBSTANTIAL COMPLETION**

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

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

**§ 9.8.3** Upon receipt of the Contractor's list, the Design Agent will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Design Agent's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Design Agent. In such case, the Contractor shall then submit a request for another inspection by the Design Agent to determine Substantial Completion. The Design Agent will perform no more than 2 inspections to determine whether the Work or a designated portion thereof has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for any additional inspections.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Design Agent will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment less the amount of five (5%) percent to be retained by the Owner until the first anniversary of Final Completion of the Work. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

#### **§ 9.9 PARTIAL OCCUPANCY OR USE**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Design Agent as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Design Agent.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor and Design Agent shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

#### **§ 9.10 FINAL COMPLETION AND FINAL PAYMENT**

**§ 9.10.1** Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Design Agent will promptly make such inspection and, when the Design Agent finds the Work acceptable under the Contract Documents and the Contract fully performed, the Design Agent will promptly issue a final Certificate for Payment stating that to the best of the Design Agent's knowledge, information and belief, and on the basis of the Design Agent's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Design Agent's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. The Design Agent will perform no more than 2 inspections to determine whether the Work or a designated portion thereof has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement from the Contractor for amounts paid to the Design Agent for any additional inspections.



**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Design Agent (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 working days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner, and (6) all other close-out documents required by the Owner, including without limitation, all as-built plans, warranties, manuals, and other materials set forth in the Contract Documents. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. 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 all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Design Agent so confirms, the Owner shall, upon application by the Contractor and certification by the Design Agent, 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 to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Design Agent prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 claims permitted under the State of Rhode Island General Conditions of Purchase Regulation.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

**§ 9.11** The Contractor and the Contractor's surety shall be liable for and shall pay the Owner as liquidated damages the sums specified in the Solicitation and Bid Form, or if completed, the amount set forth in Section 3.4 of the Agreement.

**§ 9.12** Warranties required by the Contract Documents shall commence on the date of Final Completion of the Work.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS**

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

### **§ 10.2 SAFETY OF PERSONS AND PROPERTY**

**§ 10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .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 or the Contractor's Subcontractors or Sub-subcontractors; 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.

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§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel and in consultation with the appropriate governmental authorities.

§ 10.2.4.1 When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the User Agency and the Owner reasonable advance notice.

§ 10.2.4.2 If the Contract Documents require the Contractor to handle materials or substances that under certain circumstances may be designated as hazardous, the Contractor shall handle such materials in an appropriate manner.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Design Agent or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Design Agent.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### § 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. 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 report the condition to the Owner and Design Agent in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Design Agent the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Design Agent will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons

or entities proposed by the Owner. If either the Contractor or Design Agent has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Design Agent have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

**§ 10.3.3** To the extent permitted by the provisions of R.I. Gen. Laws §§ 9-31-1 et seq., the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Design Agent, Design Agent's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

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

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

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

#### **§ 10.4 EMERGENCIES**

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

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 CONTRACTOR'S LIABILITY INSURANCE**

**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as is specified in the Solicitation and as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

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§ 11.1.1.2 The Contractor's liability insurance shall include all major coverages and be on a comprehensive general liability basis.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance as specified in the Solicitation and as otherwise acceptable to the Owner shall be filed with the Owner and the User Agency prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 working days' prior written notice has been given to the Owner and the User Agency. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the User Agency, and their elected and appointed officials, members, employees, and agents, the Design Agent and the Design Agent's consultants as additional insureds for claims caused in whole or in part by the Contractor's acts or omissions during the Contractor's operations; and (2) the Owner, the User Agency, and their elected and appointed officials, members, employees, and agents, as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.1.5 The Contractor shall be responsible for the prompt payment to the Owner of any deductible amounts under any insurance policies required under the Contract Documents for claims made pursuant to such policies.

## § 11.2 OWNER'S LIABILITY INSURANCE.

§ 11.2.1 The Contractor shall furnish the Owner and the User Agency, through the Design Agent, an insurance certificate providing Owner's Protective Liability extended to include the interests of the Design Agent, and to protect the Owner, User Agency, and Design Agent from any liability which might be incurred against any of them as a result of any operation of the Contractor or Subcontractors or their employees or anyone for whom either the Contractor or Subcontractors are responsible. Such insurance shall be written for the same limits as the Contractor's comprehensive general liability insurance and shall include the same coverage.

§ 11.2.2 If the Owner engages separate contractors to perform work for, or in or around, the Project, it shall require in its contracts with each separate contractor that Contractor and its officers, directors, partners, members, employees, and agents shall be: (i) named as additional insureds on a primary, noncontributory basis to any commercial general liability, pollution liability, and excess liability insurance policies; and (ii) provided a waiver of subrogation on all workers compensation and professional liability insurance policies.

## § 11.3 PROPERTY INSURANCE

§ 11.3.1 The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the state of Rhode Island, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the User Agency, the Contractor, Subcontractors and Sub-subcontractors in the Project. If the Owner and/or

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the User Agency incur any damages by failure of the Contractor to maintain such insurance, then the Contractor shall bear all reasonable cost resulting from such failure.

**§ 11.3.1.1** Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Design Agent's and Contractor's services and expenses required as a result of such insured loss.

**§ 11.3.1.2 Deleted.**

**§ 11.3.1.3** If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

**§ 11.3.1.4** This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

**§ 11.3.1.5** Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

**§ 11.3.2 Deleted.**

**§ 11.3.3 Deleted.**

**§ 11.3.4 Deleted.**

**§ 11.3.5** 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, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

**§ 11.3.6** Before an exposure to loss may occur, the Contractor shall file with the Owner a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 working days' prior written notice has been given to the Owner and the User Agency.

### **§ 11.3.7 WAIVERS OF SUBROGATION**

The Contractor waives all rights against the Owner and the User Agency and any of their subcontractors, sub-subcontractors, agents and employees, and (2) the Design Agent, Design Agent's consultants, separate contractors described in Article 6, 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 covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Design Agent, Design Agent's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

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**§ 11.3.8** A loss insured under this property insurance shall be adjusted by the Contractor as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

**§ 11.3.9** If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

**§ 11.3.10** The Contractor as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within 5 working days after occurrence of loss to the Contractor's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement.

#### **§ 11.4 PERFORMANCE BOND AND PAYMENT BOND**

**§ 11.4.1** The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Solicitation.

**§ 11.4.2** 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 12 UNCOVERING AND CORRECTION OF WORK**

#### **§ 12.1 UNCOVERING OF WORK**

**§ 12.1.1** If a portion of the Work is covered contrary to the Design Agent's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Design Agent, be uncovered for the Design Agent's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Design Agent has not specifically requested to examine prior to its being covered, the Design Agent may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

#### **§ 12.2 CORRECTION OF WORK**

##### **§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION**

The Contractor shall promptly correct Work rejected by the Design Agent 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 Design Agent's services and expenses made necessary thereby, shall be at the Contractor's expense.

##### **§ 12.2.2 AFTER SUBSTANTIAL COMPLETION**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Final Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of 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 written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If

the Contractor fails to correct nonconforming Work within a reasonable time after receipt of notice from the Owner or Design Agent, the Owner may correct it in accordance with Section 2.4.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

**§ 12.2.2.4** Upon request by the Owner and prior to the expiration of one year from the date of Final Completion, the Design Agent will conduct and the Contractor shall attend 2 meetings with the Owner to review the facility operations and performance.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### **§ 12.3 ACCEPTANCE OF NONCONFORMING WORK**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 GOVERNING LAW**

The Contract shall be governed by the law of the State of Rhode Island.

### **§ 13.2 SUCCESSORS AND ASSIGNS**

**§ 13.2.1** The Owner and Contractor respectively bind themselves, their successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

**§ 13.2.2** The Owner may, without consent of the Contractor, assign the Contract to any executive, legislative, judicial, regulatory, or administrative body of the state, or any political subdivision thereof, including without limitation, any department, division, agency, commission, board, office, bureau, authority, school, water, or fire district, or other agency of Rhode Island state or local government that exercises governmental functions, any other governmental authority, and any quasi-public corporation and/or body corporate and politic. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### **§ 13.3 WRITTEN NOTICE**

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice, or when received, if manually delivered or transmitted by electronic mail or facsimile to the last such address known to the party giving notice.

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## § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Design Agent or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

## § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Design Agent timely notice of when and where tests and inspections are to be made so that the Design Agent may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Design Agent, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Design Agent will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Design Agent of when and where tests and inspections are to be made so that the Design Agent may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Design Agent's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Design Agent.

§ 13.5.5 If the Design Agent is to observe tests, inspections or approvals required by the Contract Documents, the Design Agent will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

## § 13.6 INTEREST

No interest shall be due or payable on account of any payment due or unpaid under the Contract Documents except in accordance with the provisions of "Prompt Payment by Department of Administration," R.I. Gen. Laws §§ 42-11.1-1 et seq.

## § 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 calendar days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons

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or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped; or
- .3 Because the Design Agent has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1

#### § 14.1.2 Deleted.

§ 14.1.3 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon 7 working days' written notice to the Owner and Design Agent, terminate the Contract and recover from the Owner payment for Work executed.

§ 14.1.4 If the Work is stopped for a period of 60 calendar days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon 7 additional days' written notice to the Owner and the Design Agent, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor:

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 disregards or fails to comply with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;
- .4 otherwise is guilty of breach of a provision of the Contract Documents; or
- .5 cancels or the Contractor or the Owner receives notice of cancellation or nonrenewal of any insurance required under the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, 7 working days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

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

### § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

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**§ 14.3.2** The  
(Paragraphs deleted)

Owner shall not be liable to the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work in accordance with the provisions of Section 8.3.1.

**§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

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

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

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination.

**ARTICLE 15 CLAIMS AND DISPUTES**

**§ 15.1 CLAIMS**

**§ 15.1.1 DEFINITION**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

**§ 15.1.2 NOTICE OF CLAIMS**

Claims by either the Owner or Contractor must be initiated by written 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 serviced if delivered in person, by mail, by courier, or by electronic transmission. Claims by either party must be initiated within 21 working days after occurrence of the event giving rise to such Claim or within 21 working days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

**§ 15.1.3 CONTINUING CONTRACT PERFORMANCE**

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

**§ 15.1.4 CLAIMS FOR ADDITIONAL COST**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

**§ 15.1.5 CLAIMS FOR ADDITIONAL TIME**

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

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

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

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

**§ 15.1.6**

*(Paragraphs deleted)*

**Deleted.**

**§ 15.2 INITIAL DECISION**

**§ 15.2.1** Claims shall be referred to the Initial Decision Maker for initial decision. The University of Rhode Island Vice President for Administration and Finance appointed pursuant to the provisions of the "Delegation of Limited Procurement Authority," dated January 19, 2018, will serve as the Initial Decision Maker in accordance with the provisions of the "Delegations of Limited Procurement Authority," State Purchases Act, State of Rhode Island Procurement Regulations, and this Section 15.2.1. An initial decision shall be required as a condition precedent to binding dispute resolution pursuant to Section 15.3.1 of any Claim arising prior to the date final payment is due.

**§ 15.2.2 Deleted.**

**§ 15.2.3 Deleted.**

**§ 15.2.4 Deleted.**

**§ 15.2.5 Deleted.**

**§ 15.2.6 Deleted.**

**§ 15.2.6.1 Deleted.**

**§ 15.2.7 Deleted.**

**§ 15.2.8 Deleted.**

**§ 15.3 MEDIATION**

**§ 15.3.1** For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 15.2.1, and prior to the implementation of the binding dispute resolution procedures set forth in Section 15.4.1, the Contractor or the Architect shall have the option to pursue mediation, exercisable by written notice to the Owner within 30 calendar days of an Initial Decision. In the event of the exercise of such option by the Contractor or the Architect, the Owner and the Contractor or the Architect shall attempt to select a mediator, and in the event that the Owner and the Contractor or the Architect cannot agree on a mediator, either party may apply in writing to the Presiding Justice of the Providence County Superior Court, with a copy to the other, with a request for the court to appoint a mediator, and the costs of the mediator shall be borne equally by both parties.

**§ 15.3.2 Deleted.**

**§ 15.3.3 Deleted.**

**§ 15.4 BINDING DISPUTE RESOLUTION**

**§ 15.4.1** For any Claim not resolved by the Initial Decision Maker procedures set forth in Section 15.2.1, or mediation at the option of the Contractor pursuant to Section 15.3.1, the method of binding dispute resolution shall be determined in accordance with the provisions of the "Public Works Arbitration Act," R.I. Gen. Laws §§ 37-16-1 et seq.

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*(Paragraphs deleted)*

**§ 15.4.4 Deleted.**

**§ 15.4.4.1 Deleted.**

**§ 15.4.4.2 Deleted.**

**§ 15.4.4.3 Deleted.**

## **§ 16 COMPLIANCE WITH APPLICABLE LAW**

The Contractor and its Subcontractors shall comply with all applicable federal, state, and local laws.

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**DOCUMENT 00 7200 – URI STANDARD DOCUMENTS**

**PART 1 – GENERAL**

- 1.1 The latest version of the following documents, available on the URI Capital Projects website, <http://web.uri.edu/capitalprojects/manual-for-construction-project-safety-procedures/>, will apply to all of the work of this project and are hereby incorporated by reference:

URI Sexual Harassment Policy  
Manual for Construction Project Safety Procedures  
Hot Work Procedure  
Managing Fire Protection System Impairment  
URI Water System Regulations/Policies

**END OF DOCUMENT**

## **SECTION 01 1000 - SUMMARY**

### **PART 1 - GENERAL**

#### **1.01 PROJECT**

- A. See Bid Form for official Project Information.
- B. The Project consists of the construction of the following types of work:
  - 1. Removal of exterior decking and built-in bench, replacement of the decking and installation of a new code-compliant railing.
  - 2. Accessibility upgrades including installation of an accessible parking space, modifications to an existing ramp, removal of one non-accessible toilet room which will be replaced with two accessible toilet rooms.
  - 3. Installation of a new exterior door to service the kitchen area with a new 2-step concrete stair and landing for access.
  - 4. Finish upgrades to limited areas including interior painting, renovation of the service bar area, installation of large interior barn doors for space separation, refinishing of the existing wood floor, installation of ceiling-mounted acoustic panels and installation of some new resilient flooring
  - 5. MEP scope to include some new plumbing fixtures, new power outlets, new interior and exterior light fixtures attached to existing wiring, new ventilation for the bathrooms, minor extension of the fin tube heating, and replacement of the new ceiling fans.

#### **1.02 CONTRACT DESCRIPTION**

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 5200 - Agreement.

#### **1.03 DESCRIPTION OF WORK**

- A. Scope of demolition and removal work is shown on drawings plus as specified in Section 024119.
- B. Scope of alterations work is shown on drawings and/or as specified herein.
- C. Site modifications: As noted in section 1.01.B.1 and 1.01.B.2 above and as shown on the drawings.
- D. Architectural modifications: As noted in section 1.01.B.2-4 above and as shown on the drawings.
- E. Mechanical modifications: As noted in section 1.01.B.5 above and as shown on the drawings.
- F. Plumbing modifications: As noted in section 1.01.B.5 above and as shown on the drawings.
- G. Electrical modifications: Removal and replacement of existing ceiling fans and light

fixtures retaining existing wiring as indicated on drawings. Removal of selective electrical outlets and conduit and installation of new outlets as indicated on drawings.

#### **1.04 OWNER OCCUPANCY/SCHEDULE**

- A. Owner intends to close the facility down during the entirety of construction. Work areas will be made available as mutually agreed to during project scheduling. See Attachment A at the end of this section for availability and restrictions on access to spaces.
- B. Work to begin within 7 days of receipt of Purchase Order unless otherwise defined in Attachment A at the end of this section.
- D. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

#### **1.05 CONTRACTOR USE OF SITE AND PREMISES**

- A. Construction Operations: Limited to areas noted on Drawings. Coordinate with Attachment A following this section. Include all costs of this coordination, including all premium time wages that may be required to meet these requirements, in the Base bid.
- B. Arrange use of site and premises to allow:
  - 1. Adjacent projects to progress as planned for the Owner.
  - 2. Use of street and adjacent properties by the Public.
  - 3. Continued operation of the facility in accordance with Attachment A.
- C. Provide access to and from site as required by law and by Owner:
  - 1. Maintain appropriate egress for workforce and users of the facility.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit. Provide necessary signage and barriers to direct pedestrians around work areas.
- D. Time Restrictions:
  - 1. Limit conduct of especially noisy work when events are in process or when notified by the Owner.
  - 2. Night and weekend work is not allowed.
  - 3. Refer to Attachment A following this section for building specific scheduling restrictions
- E. Utility Outages and Shutdown:
  - 1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
  - 2. Prevent accidental disruption of utility services to other facilities.
  - 3. Contractor to provide written notification on Fire Sprinkler and Alarm System Impairment Notification Form following this section as Attachment B.

#### **1.06 ITEMS TO BE SALVAGED**

- A. Projection screen mounted to structure at grid line 3 and as noted on drawing ASR101.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION – NOT USED**

**END OF MAIN SECTION – See Attachments A, B & C following.**

**Attachment A – 01 1010**

**NOTE:**

**Unrestricted = Contractor to plan and schedule work and submit for review by Owner**

**Limited Restriction = Contractor to meet with Owner and coordinate access to these areas**

**Restricted = Contractor to perform work on dates provided in this document**

The entire Mosby Center Building will have unrestricted access during the entirety of the project.

The Contractor will be responsible for providing erosion & sediment protection for all work on the project exterior. Hay bales or silt socks shall be removed in their entirety by the contractor upon project completion.

The contractor is responsible to restore the project site disturbed during construction to its original state.

Construction laydown space shall be limited to the existing gravel parking area.

The Contractor is responsible for maintaining egress paths during construction to the satisfaction of the Fire Marshall and the AHJ.

Parking is restricted to areas designated by the University.



OFFICE OF CAPITAL PROJECTS

Sherman Building, 523 Plains Road, Kingston, RI 02881 USA p: 401.874.2725 f: 401.874.5599

Fire Sprinkler and Alarm System Impairment Notification Form

To: URI Office of Capital Projects

Date \_\_\_\_\_

Start of Planned Impairment: \_\_\_\_\_

End of Planned Impairment: \_\_\_\_\_

Building occupied during impairment: Yes: \_\_\_\_\_ No: \_\_\_\_\_

Any hot work to be performed: Yes: \_\_\_\_\_ No: \_\_\_\_\_

Description of Work to be performed: \_\_\_\_\_  
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URI Manager of Alarms, Mike Suriani, can also be directly contacted at 401-639-2268.

Contractor supervisory personnel shall remain in the building for the entire duration of the impairment.

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

Company: \_\_\_\_\_

Phone: \_\_\_\_\_

**01 1030 SUMMARY - Attachment C  
Abatement Plan**

The asbestos abatement plan following this page has been prepared by the University's consultant and applies to the work areas of this project as noted. The following work has already been accomplished by other subcontractors:

*None*

The following work is to be included as part of this project and shall be included in the Base Bid price:

*None*

.



**SECTION 01 2000 - PRICE AND PAYMENT PROCEDURES****PART 1 - GENERAL**

## 1.01 SECTION INCLUDES

- A. Allowances.
- B. Testing and inspection allowances.
- C. Schedule of values.
- D. Applications for payment.
- E. Warranty inspection retainage.
- F. Sales tax exemption.
- G. Change procedures.
- H. Defect assessment.
- I. Unit prices.
- J. Alternates.

## 1.02 ALLOWANCES

- A. See General Conditions Article 3.8 for Allowance provisions.
- B. Design Agent Responsibility:
  - 1. Consult with Contractor for consideration and selection of products, suppliers, and Installers.
  - 2. Select products in consultation with Owner and transmit decision to Contractor.
  - 3. Prepare Change Order to adjust final cost.
- C. Contractor Responsibility:
  - 1. Assist Design Agent or its Consultants in selection of products, suppliers and installers.
  - 2. Obtain proposals from suppliers and installers, and offer recommendations.
  - 3. On notification on selection by Design Agent, execute purchase agreement with designated supplier and installer.
  - 4. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
  - 5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- D. Schedule of Allowances: See Attachment A.

### 1.03 TESTING AND INSPECTION ALLOWANCE

- A. All costs of regularly scheduled testing are included in the Base Bid. See Attachment A for allowance to cover costs of additional testing to be provided when directed by the Owner.
- B. See Section 01 4000 and its attachment for testing requirements.

### 1.04 SCHEDULE OF VALUES

- A. Submit Schedule of Values in duplicate, one copyrighted original and one copy.
- B. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds, insurance and closeout.
- C. Include in each line item, the amount of Allowances specified in this Section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- D. Include separately for each line item, a direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.

### 1.05 APPLICATIONS FOR PAYMENT

- A. Submit each application on an original AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet, accompanied by three copies.
  - 1. Prepare a draft version "pencil copy" of each application and distribute via email 5 days prior to due date for review by Design Agent and Owner's representative.
  - 2. After making agreed revisions, individually sign and notarize and emboss with notary's official seal, the original and each of the three copies. Deliver to Owner's representative for further processing and distribution.
  - 3. Applications not including original copyrighted AIA G702, and G703 Forms, will be rejected, and returned for re-submittal.
  - 4. Applications not properly signed and notarized will be rejected, and returned for re-submittal.
  - 5. Applications submitted without the following items described in this section and its attachments will be returned for resubmittal.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Provide one hard copy and one copy in disc form of the updated construction schedule with each Application for Payment submission, prepared per Section 01 3300.

1. Provide a statement signed by the Contractor's firm principal certifying that there are no unidentified outstanding claims for delay.
- D. Include with each monthly Application for Payment, following the first application, Certified Monthly Payroll Records with proper compliance cover sheet for the previous month's pay period. Identify MBE/DBE subcontractors and hours worked in a format acceptable to URI. See Attachment A this section for current State and Federal requirements.
- E. Submit with transmittal letter as specified for Submittals in Section 01 3300.
- F. Beginning with the second Application for Payment, Contractor's right to payment must be substantiated by documenting, on a copy of the URI Waiver of Lien Form included in Document 00 6140 - Waiver of Lien Form in this Project Manual, that payment monies due, less retainage not exceeding ten percent, have been paid in full to subcontractor and suppliers for work, materials, or rental of equipment billed for under specific line item numbers in the immediately preceding application.
- G. Substantiating Data: When the Owner or Design Agent requires additional substantiating information from the review of the "pencil copy", submit data justifying dollar amounts in question.
- H. In addition to the items above, include the following with the Application for Payment :
  1. Record Documents as specified in Section 01 7800, for review by the Owner which will be returned to the Contractor.
  2. Affidavits attesting to off-site stored products with insurance certificates as requested.
  3. Digital Photographs as specified in Section 01 3300. Include on same disc with construction schedule.
- I. Payment Period: Submit at monthly intervals unless stipulated otherwise in the Supplemental General Conditions.

#### 1.06 WARRANTY INSPECTION RETAINAGE

- A. A percentage of job cost as defined in Attachment A will be retained from Final Payment for a duration of ten months. If, after ten months, all systems including mechanical and electrical, are determined by the Owner to be properly functioning, the Warranty Inspection Retainage will be released.
- B. If, after ten months, there are found to be modifications, adjustments, or corrections necessary to be made to address any system or product malfunction, in order to fulfill specified performance or requirements of such systems or products, release of the warranty inspection retainage will be delayed until such malfunctions are rectified.
- C. If, after twelve months from the date of Final Completion, all systems have not been fully addressed, the Owner may utilize the Warranty Inspection Retainage to hire others to execute necessary modifications, adjustments, or corrections.

### 1.07 SALES TAX EXEMPTION

- A. Owner is exempt from sales tax on products permanently incorporated in Work of the Project.
  - 1. Obtain sales tax exemption certificate number from Owner.
  - 2. Place exemption certificate number on invoice for materials incorporated in the Work of the Project.
  - 3. Furnish copies of invoices to Owner.
  - 4. Upon completion of Work, file a notarized statement with Owner that all purchases made under exemption certificate were entitled to be exempt.
  - 5. Pay legally assessed penalties for improper use of exemption certificate number.

### 1.08 CHANGE PROCEDURES

- A. Submittals: Submit name of the individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. The Design Agent will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time by issuing supplemental instructions on AIA Form G710.
- C. The Design Agent may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required, and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 15 days.
- D. The Contractor may propose changes by submitting a request for change to the Design Agent, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation, and a statement describing the effect on Work by separate or other Contractors. Document any requested substitutions in accordance with Section 01 6000.
- E. Stipulated Sum Change Order: Based on Proposal Request, and Contractor's fixed price quotation, or Contractor's request for a Change Order as approved by Design Agent.
- F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute the Work under a Construction Change Directive. Changes in the Contract Sum or Contract Time will be computed as specified for a Time and Material Change Order.
- G. Construction Change Directive: Design Agent may issue a directive, on AIA Form G713 Construction Change Directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in the Contract Sum or Contract Time. Promptly execute the change.

- H. Time and Material Change Order: Submit an itemized account and supporting data after completion of the change, including timeslips signed by Owner's representative, within the time limits indicated in the Conditions of the Contract. The Design Agent will determine the change allowable in the Contract Sum and Contract Time as provided in the Contract Documents. Only Owner-representative-signed timeslips will be considered.
  - I. Maintain detailed records of work done on a Time and Material basis. Submit timeslips daily for verification and sign-off by Owner's representative on-site. Provide full information required for an evaluation of the proposed changes, and to substantiate costs for the changes in the Work.
  - J. Document each quotation for a change in cost or time with sufficient data to allow an evaluation of the quotation. Provide detailed breakdown of costs and estimates for labor and materials including a detailed breakdown for subcontractor's or vendor's Work. Include copies of written quotations from subcontractors or vendors.
  - K. Change Order Forms: AIA G701 Change Order.
  - L. Execution of Change Orders: The Design Agent will issue Change Orders for signatures of the parties as provided in the Conditions of the Contract.
  - M. Correlation Of Contractor Submittals:
    - 1. Promptly revise the Schedule of Values and the Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum. Promptly revise progress schedules to reflect any change in the Contract Time, revise sub-schedules to adjust times for any other items of work affected by the change, and resubmit.
    - 2. Promptly enter changes in the Project Record Documents.
- 1.09 DEFECT ASSESSMENT
- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
  - B. If, in the opinion of the Design Agent, it is not practical to remove and replace the Work, the Design Agent will direct an appropriate remedy or adjust payment.
  - C. The defective Work may remain, but the unit sum will be adjusted to a new sum at the discretion of the Design Agent.
  - D. The defective Work will be partially repaired to the instructions of the Design Agent, and the unit sum will be adjusted to a new sum at the discretion of the Design Agent.
  - E. The individual Specification Sections may modify these options or may identify a specific formula or percentage sum reduction.

- F. The authority of the Design Agent to assess the defect and identify a payment adjustment, is final.
- G. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.
  - 5. Products remaining on hand after completion of the Work.
  - 6. Loading, hauling, and disposing of rejected products.

#### 1.10 UNIT PRICES

- A. See Attachment A.

#### 1.11 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in the Purchase Order.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates: See Attachment A.

### **PART 2 - PRODUCTS**

Not Used.

### **PART 3 - EXECUTION**

Not Used.

### **END OF SECTION**

**01 2010 PRICE AND PAYMENT PROCEDURES - Attachment A**

## A. Allowances

1. \$7,500 – Unforeseen Architectural Coordination
2. \$7,500 – Unforeseen MEP Coordination

## B. Testing Allowance

1. None

## C. Unit Prices

1. None

## D. Alternates

1. Fire alarm control panel replacement per sheet E401.
2. Remove existing exterior window and door trim on the first floor as well as roof rake trim and replace with PVC trim as detailed on exterior elevation sheets A311 and A312.
3. Provide 3/8" diameter Type 316 stainless steel hollow pipe railing infill in lieu of 1/2" diameter powder-coated aluminum pipe railing infill as noted on sheet A401.
4. Add wood wainscot and wood fin tube cover for existing fin tube in lieu of chair rail in Main Hall as indicated on sheets A301, A1001 and A1115.

## E. Payroll Reporting

1. Forms for the submission of Certified Payroll Records may be found from the Rhode Island [Prevailing Wage Website](#) in either PDF or Excel formats. These forms must be used on monthly submittals.
2. Identify Apprenticeship hours required under RIGL 37-13-3.1 for all contracts over \$1million in value.
3. A Minority Utilization Report for minority subcontractors must be included. Use the form provided as Attachment B.

## E. Warranty Inspection Retainage

1. One-half of one percent of the cost of the Work will be retained from Final Payment for this purpose.

**END OF ATTACHMENT**



**MBE Compliance Office      Attachment B – 01 2020**  
**1 Capitol Hill, 2<sup>nd</sup> Floor**  
**Providence, RI 02908**  
**401-574-8670, 401-574-8387 (fax)**

[www.mbe.ri.gov](http://www.mbe.ri.gov) (website)

Pursuant to RIGL 37-14.1 as well as the regulations promulgated thereto, the MBE Compliance Office requires that you complete the following table. Please note that these figures will be verified with the MBEs identified. If there are outstanding issues, such as retainage or a dispute, please indicate and attach supporting documentation for same. Also note that copies of invoice and cancelled checks for payment to all MBE subcontractors and suppliers are required.

**Contractor/Vendor Name:**

**Project Name & Location:**

**Original Prime Contract Amount: \$ \_\_\_\_\_**

**Current Prime Contract Amount: \_\_\_\_\_**

<b>MBE/WBE Subcontractor</b>	<b>Original Contract Amount</b>	<b>Change Orders</b>	<b>Revised Contract Value</b>	<b>% Completed To Date</b>	<b>Amount Paid To Date</b>	<b>Amount Due</b>	<b>Retainage %</b>	<b>Retainage Amount</b>	<b>Explanation</b>

I declare, under penalty of perjury, that the information provided in this verification form and supporting documents is true and correct.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

Notary Certificate:

Sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Notary Signature

\_\_\_\_\_  
Commission Expires

**SECTION 01 3000 - ADMINISTRATIVE REQUIREMENTS****PART 1 - GENERAL**

## 1.01 SECTION INCLUDES

- A. Site administration
- B. Coordination and project conditions.
- C. Preconstruction meeting.
- D. Site mobilization meeting.
- E. Progress meetings.
- F. Pre-installation meetings.

## 1.02 SITE ADMINISTRATION

- A. Maintain a daily attendance log to include the names of all project employees and guests to the site. Each guest signing the log should indicate a brief description of the reason for the visit, the guest's employer or organization. The log sheet, or sheets, must clearly indicate the Project Name, and the name of the Prime contractor. Each line in the log should allow for the name of that employee, the employee's job title (use terminology used by prevailing wage job title), and the name of that employee's employer. This log shall be kept on a uniform form prescribed by the Director of Labor and Training. Such log shall be available for inspection on the site at all times by the Purchaser, Owner, and/or the Director of the Department of Labor and Training and his or her designee. Provide copies when requested. The log shall comply with requirements of RIGL 37-12-12(c.).

## 1.03 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate the scheduling, submittals, and the Work of the various Sections of the Project Manual to ensure an efficient and orderly sequence of the installation of interdependent construction elements.
- B. Verify that the utility requirements and characteristics of the operating equipment are compatible with the building utilities. Coordinate the Work of the various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate the space requirements, supports and installation of the mechanical and electrical Work, which are indicated diagrammatically on the Drawings. Follow the routing shown for the pipes, ducts, and conduit, as closely as practicable; place runs parallel with the lines of the building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

- D. Coordinate the completion and clean up of the Work of the separate Sections in preparation for Substantial Completion and for portions of the Work designated for the Owner's partial occupancy.
- E. After the Owner's occupancy of the premises, coordinate access to the site for correction of defective Work and the Work not in accordance with the Contract Documents to minimize disruption of the Owner's activities.

#### 1.04 PRECONSTRUCTION MEETING

- A. The Design Agent will schedule a meeting after a Purchase Order is issued to the Contractor.
- B. Attendance Required: Owner's Representative, Design Agent, and Contractor.
- C. Agenda:
  - 1. Distribution of the Contract Documents.
  - 2. Submission of a list of Subcontractors, a list of products, schedule of values, and a progress schedule.
  - 3. Designation of the personnel representing the parties in the Contract and the Design Agent.
  - 4. The procedures and processing of the field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders, and Contract closeout procedures.
  - 5. Scheduling.
- D. Contractor shall record the minutes and distribute copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, other participants, and those consultants affected by the decisions made.

#### 1.05 SITE MOBILIZATION MEETING

- A. The Design Agent will schedule a meeting at the Project site prior to the Contractor's occupancy and may occur at the same time as the Preconstruction meeting noted above.
- B. Attendance Required: The Owner, Design Agent, Contractor, the Contractor's Superintendent, and major Subcontractors.
- C. Agenda:
  - 1. Use of the premises by the Owner and the Contractor.
  - 2. The Owner's requirements and partial occupancy.
  - 3. Construction facilities and controls provided by the Owner.
  - 4. Temporary utilities provided by the Owner.
  - 5. Security and housekeeping procedures.
  - 6. Schedules.
  - 7. Application for payment procedures.
  - 8. Procedures for testing.

9. Procedures for maintaining the record documents.
10. Requirements for the start-up of equipment.
11. Inspection and acceptance of the equipment put into service during the construction period.

- D. Contractor shall record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, other participants, and those consultants affected by the decisions made.

#### 1.06 PROGRESS MEETINGS

- A. Schedule and administer the meetings throughout the progress of the Work at weekly intervals while work is in process.
- B. Make arrangements for the meetings, prepare the agenda with copies for the participants, and preside at the meetings.
- C. Attendance Required: The job superintendent, major subcontractors and suppliers, the Owner, Design Agent, and Consultants as appropriate to agenda topics for each meeting.
- D. Agenda:
  1. Review the minutes of previous meetings.
  2. Review of the Work progress.
  3. Field observations, problems, and decisions.
  4. Identification of the problems which impede the planned progress.
  5. Review of the submittals schedule and status of the submittals.
  6. Review of delivery schedules.
  7. Maintenance of the progress schedule.
  8. Corrective measures to regain the projected schedules.
  9. Planned progress during the succeeding work period.
  10. Coordination of the projected progress.
  11. Maintenance of the quality and work standards.
  12. Effect of the proposed changes on the progress schedule and coordination.
  13. Other business relating to the Work.
- E. Contractor shall record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Consultants, Owner, participants, and others affected by the decisions made.

#### 1.07 PREINSTALLATION MEETINGS

- A. When required in the individual specification Sections, convene a pre-installation meeting at the site prior to commencing the Work of the Section.
- B. Require attendance of the parties directly affecting, or affected by, the Work of the specific Section.

- C. Notify the Design Agent four days in advance of the meeting date.
- D. Prepare an agenda and preside at the meeting:
  - 1. Review the conditions of installation, preparation and installation procedures.
  - 2. Review coordination with the related work.
- E. Record the minutes and distribute the copies within two days after the meeting to the participants, with copies to the Design Agent, Owner, participants, and those Consultants affected by the decisions made.

## **PART 2 - PRODUCTS**

Not used.

## **PART 3 - EXECUTION**

Not used.

## **END OF SECTION**

**01 3010 ADMINISTRATIVE REQUIREMENTS - Attachment A**

A. Pre-installation Meetings

1. The following items of work will require pre-installation meetings:

- 033000 – Cast-in-Place Concrete
- 061533 – Wood Decking
- 081433 – Stile and Rail Wood Doors
- 085200 – Exterior Windows
- 087111 – Door Hardware
- 096519 – Resilient Tile Flooring
- 098436 – Sound-Absorbing Ceiling Units

**END OF ATTACHMENT**



## **SECTION 01 3300 - SUBMITTAL PROCEDURES**

### **PART 1 - GENERAL**

#### 1.01 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Product data.
- E. Shop drawings.
- F. Design Data.
- G. Samples.
- H. Test reports.
- I. Certificates.
- J. Manufacturer's instructions.
- K. Manufacturer's field reports.
- L. Digital Photographs.
- M. Erection drawings.
- N. Construction photographs.

#### 1.02 SUBMITTAL PROCEDURES

- A. Master List Submittal:
  - 1. Submit a master list of the required submittals with a proposed date for each item to be submitted. See Attachment A for initial minimum list on which to base master.
  - 2. Show the date submittal was sent, days since submittal was sent, status of submittal, date submittal was received in return, and any date associated with resubmittals.
  - 3. Up date master list with each submission and response.
  - 4. Issue copy of master list at least monthly to the Design Agent.

- B. Transmit each submittal with a dated Design Agent-accepted transmittal form.
- C. Transmit printed copies and electronic PDF copy of each submittal to the Design Agent for review and comment as outlined in each section below.
- D. Sequentially number the transmittal form. Mark revised submittals with an original number and a sequential alphabetic suffix.
- E. Identify the Project, Contractor, subcontractor and supplier; the pertinent drawing and detail number, and the specification Section number, appropriate to the submittal.
- F. Apply a Contractor's electronic stamp certifying that the review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of the information is in accordance with the requirements of the Work and the Contract Documents.
- G. Schedule submittals to expedite the Project, and deliver to the Design Agent's FTP site. Coordinate the submission of related items.
- H. For each submittal, allow 15 days for review.
- I. Identify all variations from the Contract Documents and any Product or system limitations which may be detrimental to a successful performance of the completed Work.
- J. Allow space on the submittals for the Contractor's, Design Agent's, and Consultant's electronic review stamps.
- K. When revised for resubmission, identify the changes made since the previous submission.
- L. Distribute copies of the reviewed submittals as appropriate. Reproduce as necessary to inform subcontractors without internet download capabilities. Instruct the parties to promptly report any inability to comply with the Contract requirements.
- M. Produce additional copies as required for the Record Document purposes as described in Section 01 7800.

### 1.03 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 20 days after Date of Commencement for Design Agent to review. After a review, submit detailed schedules within 15 days modified to accommodate the revisions recommended by the Design Agent and Owner.

- B. Distribute copies of the reviewed schedules to the Project site file, subcontractors, suppliers, and other concerned parties. Instruct the recipients to promptly report, in writing, the problems anticipated by the projections indicated in the schedules
- C. Submit updated schedules with each Application for Payment, identifying changes since previous version as follows:
  - 1. Indicate the progress of each activity to the date of submittal, and the projected completion date of each activity.
  - 2. Identify the activities modified since the previous submittal, major changes in the scope, and other identifiable changes.
  - 3. Provide a narrative report to define the problem areas, the anticipated delays, and impact on the Schedule. Report the corrective action taken, or proposed, and its effect including the effect of changes on the schedules of separate contractors.
- D. Submit a computer-generated horizontal bar chart with separate line for each major portion of the Work or operation, identifying the first work day of each week.
- E. Show a complete sequence of construction by activity, identifying the Work of separate stages and other logically grouped activities. Indicate the early and late start, the early and late finish, float dates, and duration.
- F. Indicate an estimated percentage of completion for each item of the Work at each submission.
- G. Provide a separate schedule of submittal dates for shop drawings, product data, and samples, including Owner-furnished Products and Products identified under Allowances, if any, and the dates reviewed submittals will be required from the Design Agent. Indicate the decision dates for selection of the finishes.
- H. Indicate the delivery dates for Owner furnished Products, and for Products identified under Allowances.

#### 1.04 PROPOSED PRODUCTS LIST

- A. Within 20 days after the Date of Commencement, submit a list of major products proposed for use, with the name of the manufacturer, the trade name, and the model number of each product.
- B. For the products specified only by reference standards, give the manufacturer, trade name, model or catalog designation, and reference standards.
- C. With each product listed, indicate the submittal requirements specified to be adhered to, and an indication of relevant "long-lead-time" information , when appropriate.

#### 1.05 PRODUCT DATA

- A. Product Data: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Provide copies and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 7800.
- B. Submit one (1) printed copy and one (1) electronic PDF copy for review. The Design Agent will retain the reviewed printed copy for record and return the reviewed electronic PDF copy to the Contractor for distribution.
- C. Mark each copy to identify the applicable products, models, options, and other data. Supplement the manufacturers' standard data to provide the information specific to this Project.
- D. Indicate the product utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipment and appliances.
- E. After a review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01 7800.

#### 1.06 SHOP DRAWINGS

- A. Shop Drawings: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 7800.
- B. Submit two (2) printed copies and one (1) electronic PDF copy for review. The Design Agent and /or Consultants will retain the reviewed printed copies for record and return the reviewed electronic PDF copy to the Contractor for distribution.
- C. Indicate the special utility and electrical characteristics, the utility connection requirements, and the location of utility outlets for service for functional equipments and appliances.

#### 1.07 SAMPLES

- A. Samples: Submit to the Design Agent for review for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Produce duplicates and distribute in accordance with the

SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 7800.

- B. Samples for Selection as Specified in Product Sections:
  - 1. Submit to the Design Agent for aesthetic, color, or finish selection.
  - 2. Submit samples of the finishes in the colors selected for the Design Agent's records.
  - 3. After review, produce duplicates and distribute in accordance with the SUBMITTAL PROCEDURES article and for the record documents purposes described in Section 01 7800.
- C. Submit samples to illustrate the functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate the sample submittals for interfacing Work.
- F. Include identification on each sample, with the full Project information.
- G. Submit at least the number of samples specified in the individual specification Sections; the Design Agent will retain two samples.
- H. Reviewed samples, which may be used in the Work, are indicated in the individual specification Sections.
- I. Samples will not be used for testing purposes unless they are specifically stated to be in the specification Section.

#### 1.08 TEST REPORTS

- A. Submit (1) printed and (1) electronic PDF lab reports in accordance with Section 01 4000.
- B. Submit test reports for information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

#### 1.09 DESIGN DATA

- A. Submit (1) printed and (1) electronic PDF data for the Design Agent's knowledge as contract administrator for the Owner.
- B. Submit information for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

#### 1.10 CERTIFICATES

- A. When specified in the individual specification Sections, submit (1) printed and (1) electronic PDF certification by the manufacturer, installation/application subcontractor, or the Contractor to the Design Agent in the quantities specified for the Product Data.
- B. Indicate that the material or product conforms to or exceeds the specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- A. Certificates may be recent or previous test results on the material or product, but must be acceptable to the Design Agent and its Consultants.

#### 1.10 MANUFACTURER'S INSTRUCTIONS

- A. When specified in the individual specification Sections, submit (1) printed and (1) electronic PDF copy of instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to the Design Agent for delivery to the Owner in the quantities specified for Product Data.
- B. Indicate the special procedures, and the perimeter conditions requiring special attention, and the special environmental criteria required for application or installation.

#### 1.11 MANUFACTURER'S FIELD REPORTS

- A. Submit (1) printed and (1) electronic PDF of reports for the Design Agent's benefit as contract administrator for the Owner.
- B. Submit the report within 30 days of observation to the Design Agent for the limited purpose of assessing conformance with the information given and the design concept expressed in the Contract Documents.

#### 1.12 DIGITAL PHOTOGRAPHS

- A. Submit minimum 12 digital photographs of construction progress each month on the same CD as the project schedule submittal. Include both jpg. and reduced-size PDF versions for email use.
- B. Include an additional minimum of 12 photographs documenting underground utilities when installed in relationship to visible site features.
- C. Include photographs of important in-wall or ceiling utilities before close-in at appropriate stages of construction.
- D. See Section 01 7800 for close-out copy requirements of these files.

#### 1.13 ERECTION DRAWINGS

- A. When specified in the individual Specification sections, the trade contractors shall submit (1) printed and (1) electronic PDF copy of erection drawings for review prior to proceeding with fabrication and/or construction.
- B. Erection drawings shall be prepared in accordance with the latest edition of the respective trades' codes of standard practice.
- C. All erection drawings shall be fully developed by the trade contractors or by agents of the contractors. CAD files, photocopies, or other reproductions of the contract drawings in whole or in part shall not be used by the trade contractors or their agents for the preparation and development of erections drawings without the expressed written consent of the Design Agent.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

**END OF SECTION**



**01 3310 SUBMITTAL PROCEDURES - Attachment A**

## A. Submittal List

1. 033000 – Concrete product data, design mixtures, material certificates, material test reports and field quality-control reports
2. 061053 – Rough Carpentry product data and shop drawings showing extent of blocking, backer panels, including clarification of locations where pressure-treated and fire-treated wood are required.
3. 061533 – Wood Decking product data, wood sample, metal railing infill sample and delegated design package including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
4. 064023 – Interior Architectural Woodwork product data, shop drawings and product samples.
5. 079200 – Joint Sealant product test reports and product data indicating the location of each type of sealant
6. 081433 – Stile and Rail Wood Door product data, door schedule, finish sample for verification and door elevations, sections and details.
7. 085200 – Exterior Window product data, samples for verification, elevations, sections, hardware, accessories and installation details.
8. 087111 – Door Hardware product data, door schedule, mounting heights, details, keying schedule and samples for color verification.
9. 092000 – Gypsum Board product data, location and profile of accessories and trim.
10. 096519 – Resilient Tile Flooring product data, location and layout of flooring indicating seams and transitions, samples for verification.
11. 098436 – Sound Absorbing Ceiling Unit product data, shop drawings showing layout, elevations, sections, details and mounting devices and samples for verification.
12. 099113 – Exterior Painting product data and samples of each color and gloss.
13. 099123 – Interior Painting product data and samples of each color and gloss.
14. 102800 – Toilet and Bath Accessory product data, product schedule, sample for color confirmation and shop drawings indicating mounting heights, blocking requirements and attachment details.
15. 220000 Plumbing as noted in specification section
16. 260000 Electrical as noted in specification section
17. Any other submittal requirements noted in each specification section

**END OF ATTACHMENT**

## **SECTION 01 4000 – QUALITY REQUIREMENTS**

### **PART 1 - GENERAL**

#### 1.01 SECTION INCLUDES

- A. Quality control and control of installation.
- B. Verification of Credentials and Licenses.
- C. Tolerances
- D. References.
- E. Testing and inspection services.
- F. Manufacturers' field services.
- G. Mock-up Requirements.

#### 1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor a quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of the specified quality.
- B. Comply with all manufacturers' instructions and recommendations, including each step in sequence.
- C. When the manufacturers' instructions conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.
- D. Comply with the specified standards as a minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform the Work by persons qualified to produce the required and specified quality.
- F. Verify that field measurements are as indicated on the Shop Drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

### 1.03 VERIFICATION OF CREDENTIALS AND LICENSES

- A. The Owner has implemented a project management oversight process and is applying it to current construction projects at URI.
- B. An element of this oversight process is the verification that persons employed on the project site have appropriate and current credentials and licenses in their possession, at the project site, for the work they are performing.
- C. Be forewarned that state resident inspectors will be checking for verification of credentials and licenses of both union and non-union persons, in their onsite inspections.
- D. State resident inspectors will also be reviewing Contractor's Certified Monthly Payroll Records for conformance with RI State Prevailing Wage Rate requirements.
- E. Those persons without the appropriate credentials and licenses will be subject to dismissal from the project site.

### 1.04 TOLERANCES

- A. Monitor the fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with the manufacturers' tolerances. When the manufacturers' tolerances conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### 1.05 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by the date of issue current on the date of the Contract Documents, except where a specific date is established by code.
- C. Obtain copies of the standards where required by the product specification Sections.
- D. When the specified reference standards conflict with the Contract Documents, request a clarification from the Design Agent before proceeding.
- E. Neither the contractual relationships, duties, or responsibilities of the parties in the Contract, nor those of the Design Agent, shall be altered from the Contract Documents by mention or inference otherwise in reference documents.

**1.06 TESTING AND INSPECTION SERVICES**

- A. The Contractor will submit the name of an independent firm to the Design Agent for approval by the Owner, to perform the testing and inspection services. The Contractor shall pay for all the services required in the Base Bid as described in Attachment A. Contractor shall coordinate any Owner-authorized testing also described in Attachment A, to be paid for from Testing Allowance.
- B. The independent firm will perform the tests, inspections and other services specified in the individual specification Sections and as required by the Design Agent or its Consultants.
  - 1. Laboratory: Authorized to operate in the location in which the Project is located.
  - 2. Laboratory Staff: Maintain a full time registered Engineer on staff to review the services.
  - 3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either the National Bureau of Standards or to the accepted values of natural physical constants.
- C. Testing, inspections and source quality control may occur on or off the project site. Perform off-site testing as required by the Design Agent or the Owner.
- D. Reports will be submitted by the independent firm to the Design Agent, the Consultant for that trade, and the Contractor, in duplicate, indicating the observations and results of tests and indicating the compliance or non-compliance with Contract Documents.
- E. Cooperate with the independent firm; furnish samples of the materials, design mix, equipment, tools, storage, safe access, and the assistance by incidental labor as requested.
  - 1. Notify the Design Agent and Engineer and the independent firm 24 hours prior to the expected time for operations requiring services.
  - 2. Make arrangements with the independent firm and pay for additional samples and tests required for the Contractor's use.
- F. Testing and employment of the testing agency or laboratory shall not relieve the Contractor of an obligation to perform the Work in accordance with the requirements of the Contract Documents.
- G. Re-testing or re-inspection required because of a non-conformance to the specified requirements shall be performed by the same independent firm on instructions by the Design Agent or its Consultant. Payment for the re-testing or re-inspection will be charged to the Contractor by deducting the testing charges from the Contract Sum.
- H. Agency Responsibilities:
  - 1. Test samples of mixes submitted by the Contractor.
  - 2. Provide qualified personnel at the site. Cooperate with the Design Agent or its Consultant and the Contractor in performance of services.
  - 3. Perform specified sampling and testing of the products in accordance with the specified standards.
  - 4. Ascertain compliance of the materials and mixes with the requirements of the Contract

Documents.

5. Promptly notify the Design Agent, Consultant and the Contractor of observed irregularities or non-conformance of the Work or products.
  6. Perform additional tests required by the Design Agent or its Consultants.
  7. Attend the preconstruction meetings and the progress meetings.
- I. Agency Reports: After each test, promptly submit two copies of the report to the Design Agent, appropriate Consultant, and to the Contractor. When requested by the Design Agent, provide an interpretation of the test results. Include the following:
1. Date issued.
  2. Project title and number.
  3. Name of inspector.
  4. Date and time of sampling or inspection.
  5. Identification of product and specifications section.
  6. Location in the Project.
  7. Type of inspection or test.
  8. Date of test.
  9. Results of tests.
  10. Conformance with Contract Documents.
- J. Limits On Testing Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on the requirements of the Contract Documents.
  2. Agency or laboratory may not approve or accept any portion of the Work.
  4. Agency or laboratory may not assume any duties of the Contractor.
  5. Agency or laboratory has no authority to stop the Work.

#### 1.08 MANUFACTURERS' FIELD SERVICES

- A. When specified in the individual specification Sections, require the material or Product suppliers, or manufacturers, to provide qualified staff personnel to observe the site conditions, the conditions of the surfaces and installation, the quality of workmanship, the start-up of equipment, or test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit the qualifications of the observer to the Design Agent 30 days in advance of the required observations. Observer is subject to approval of the Design Agent.
- C. Report the observations and the site decisions or instructions given to the applicators or installers that are supplemental or contrary to the manufacturers' written instructions.
- D. Refer to Section 01 3300 - SUBMITTAL PROCEDURES, MANUFACTURERS' FIELD REPORTS article.

1.09 MOCK-UP REQUIREMENTS

- A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- B. Accepted mock-ups shall be a comparison standard for the remaining Work.
- C. Where mock-up has been accepted by Design Agent and is no longer needed, remove mock-up and clear area when directed to do so.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not used.

**END OF SECTION**

**01 4010 QUALITY REQUIREMENTS - Attachment A**

A. Base Bid Testing Requirements List

1. Concrete testing as required by specification section 033000 and the Authority Having Jurisdiction.
2. Concrete moisture testing for flooring adhesive as required by specification section 096519-3.2.B.

B. Additional Owner-Authorized Testing Requirements List

1. None

C. Other

1. Owner may engage a qualified testing agency for interior and exterior paint dry-film thickness testing per specification sections 099113 and 099123.

**END OF ATTACHMENT**



**SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS****PART 1 - GENERAL**

## 1.01 SECTION INCLUDES

- A. Temporary Utilities:
  - 1. Temporary electricity.
  - 2. Temporary lighting for construction purposes.
  - 3. Temporary heating.
  - 4. Temporary cooling.
  - 5. Temporary ventilation.
  - 6. Telephone service.
  - 7. Temporary water service.
  - 8. Temporary sanitary facilities.
  
- B. Construction Facilities:
  - 1. Field offices and sheds.
  - 2. Hoisting.
  - 3. Parking/Traffic.
  - 4. Progress cleaning and waste removal.
  - 5. Project identification.
  - 6. Traffic regulation.
  
- C. Temporary Controls:
  - 1. Barriers.
  - 2. Enclosures and fencing.
  - 3. Security.
  - 4. Fire detection.
  - 5. Water control.
  - 6. Dust control.
  - 7. Erosion and sediment control.
  - 8. Noise control.
  - 9. Pest control.
  - 10. Pollution control.
  - 11. Rodent control.
  
- D. Removal of utilities, facilities, and controls with reseeded and repair of grounds.
  
- E. See Attachment A for any modifications.

## 1.02 TEMPORARY ELECTRICITY

- A. The Owner will pay the cost of energy used. Exercise measures to conserve energy. Utilize the Owner's existing power service.
- B. Complement the existing power service capacity and characteristics as required for construction operations.

- C. Provide power outlets, with branch wiring and distribution boxes located at each floor or as required for construction operations. Provide flexible power cords as required for portable construction tools and equipment. All flexible power cords shall be suspended with hangers to eliminate trip hazards.
- D. Provide main service disconnect and over-current protection at a convenient location, or a feeder switch at the source distribution equipment or meter.
- E. Permanent convenience receptacles may not be utilized during construction.
- F. Provide distribution equipment, wiring, and outlets to provide single-phase branch circuits for power. Provide 20-ampere duplex outlets, single-phase circuits for power tools.

#### 1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain incandescent lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft (21 watt/sq m).
- B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- C. Maintain lighting and provide routine repairs.
- D. Permanent building lighting may be utilized during construction where not removed.

#### 1.04 TEMPORARY HEATING

- A. Existing facilities will be occupied and heated by the University when temperatures require. Take care to avoid leaving doors open in exterior walls that could compromise heating operations. For new construction, the cost of energy will be borne by the Contractor. Provide temporary heating as necessary for construction operations.
- B. Supplement with temporary heat devices if needed to maintain the specified conditions for construction operations even in existing buildings.
- C. Maintain a minimum ambient temperature of 50 degrees F in the areas where construction is in progress, unless indicated otherwise in the product Sections.
- D. In areas of work with mechanical hot-air heating, clean units and replace filters after Substantial Completion.
- E. Do not use new equipment for heating after replacement during construction.

#### 1.05 TEMPORARY COOLING

- A. Existing cooling facilities are typically not available.
- B. Provide and pay for cooling devices and cooling as needed to maintain the specified conditions for construction operations.

- C. Maintain a maximum ambient temperature of 80 degrees F in the areas where construction is in progress, unless indicated otherwise in the specifications.

#### 1.06 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to achieve a curing of materials, to dissipate humidity, and to prevent the accumulation of dust, fumes, vapors, or gases.
- B. If existing ventilation fans are used during construction, clean fans in areas of work after Substantial Completion.

#### 1.07 TELEPHONE SERVICE

- A. Provide, maintain, and pay for cell phone service to the field supervisor at the time of project mobilization and until project Final Completion.

#### 1.08 TEMPORARY WATER SERVICE

- A. The Owner will pay the cost of temporary water. Exercise measures to conserve energy. Utilize the Owner's existing water system, extend and supplement with temporary devices as needed to maintain the specified conditions for construction operations.
- B. Extend branch piping with outlets located so that water is available by hoses with threaded connections. Provide temporary pipe insulation if needed to prevent freezing.

#### 1.09 TEMPORARY SANITARY FACILITIES

- A. Contractor shall provide and maintain temporary toilet facilities for use by all construction personnel. Trades people will not be permitted to use existing facilities within the building.

#### 1.10 FIELD OFFICES AND SHEDS

- A. Do not use existing facilities for storage. Job meetings will be held on campus at a location to be chosen by the University.
- B. Storage Areas and Sheds: Size to the storage requirements for the products of the individual Sections, allowing for access and orderly provision for the maintenance and for the inspection of Products to the requirements of Section 01 6000. Containers will be permitted within the project limit line. Coordinate with URI for storage areas.
- C. Preparation: Fill and grade the sites for the temporary structures to provide drainage away from the buildings.
- D. Removal: At the completion of the Work remove the buildings, foundations, utility services, and debris. Restore the areas.

### 1.11 HOISTING

- A. Contractor is responsible for all hoisting required to facilitate, serve, stock, clean, and complete the Work. Include all costs for Operating Engineers, fuel, delivery and removal, mobilization, staging, protection of grades and surfaces, and equipment.

### 1.12 PARKING/TRAFFIC

- A. Workers must park in lots assigned by the University with daily permits. See Site Utilization Plan.
- B. Use of designated existing on-site streets and driveways for construction traffic is permitted. Tracked vehicles are not allowed on paved areas.
- C. Do not allow heavy vehicles or construction equipment in parking areas.
- D. Do not allow vehicle parking on existing sidewalks.
- E. Provide and maintain access to fire hydrants and control valves free of obstructions.
- F. Remove mud from construction vehicle wheels before entering streets. Cleanup dirt, rocks, and debris left on street from construction vehicles.
- G. Use designated existing on-site roads for construction traffic.
- H. Maintenance:
  - 1. Maintain the traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
  - 2. Maintain existing and permanent paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain the paving and drainage in original, or specified, condition.
- I. Removal, Repair:
  - 1. Remove temporary materials and at Substantial Completion.
  - 2. Remove underground work and compacted materials to a depth of 2 feet; fill and grade the site as specified.
  - 3. Repair existing and permanent facilities damaged by use, to the original or specified condition.

### 1.13 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain the site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other remote spaces, prior to enclosing the space.

- C. Broom and vacuum clean the interior areas prior to the start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from the site daily, as necessary to prevent an on-site accumulation of waste material, debris, and rubbish, and dispose off-site.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

#### 1.14 PROJECT IDENTIFICATION

- A. Project Identification Sign: One painted sign, 32 sq ft area, bottom 6 feet above the ground.
  - 1. Content:
    - a. Project title, and name of the Owner as indicated on the Contract Documents.
    - b. Names and titles of the authorities.
    - c. Names and titles of the Design Agent and Consultants.
    - d. Name of the Design Agent Contractor.
  - 2. Graphic Design, Colors, and Style of Lettering: 3 colors, as designated by the Design Agent during construction.
- B. Project Informational Signs:
  - 1. Painted informational signs of same colors and lettering as the Project Identification sign, or standard products; size lettering to provide legibility at 100-foot distance.
  - 2. Provide sign at each field office, storage shed, and directional signs to direct traffic into and within site. Relocate as the Work progress requires.
  - 3. No other signs are allowed without the Owner's permission except those required by law.
- C. Design all signs and their structures to withstand a 60-miles/hr-wind velocity.
- D. Sign Painter: Experienced as a professional sign painter for a minimum of three years.
- E. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for the duration of construction.
- F. Show content, layout, lettering, color, foundation, structure, sizes, and grades of members.
- G. Installation:
  - 1. Install the project identification sign within 15 days after the date of receipt of the Purchase Order from State of Rhode Island Department of Administration, Division of Purchases.
  - 2. Erect at the designated location.
  - 3. Erect the supports and framing on a secure foundation, rigidly braced and framed to resist wind loadings.
  - 4. Install the sign surface plumb and level, with butt joints. Anchor securely.
  - 5. Paint exposed surfaces of the sign, supports, and framing.
- H. Maintenance: Maintain the signs and supports clean, repair deterioration and damage.

- I. Removal: Remove the signs, framing, supports, and foundations at the completion of the Project and restore the area.

#### 1.15 TRAFFIC REGULATION

##### A. Signs, Signals, and Devices:

1. Post Mounted and Wall Mounted Traffic Control and Informational Signs: As approved by local jurisdictions.
2. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.
3. Flag person Equipment: As required by local jurisdictions.
4. Police Details: Provide all police details as required by local jurisdictions, including payment directly to officers.

- B. Flag Persons: Provide trained and equipped flag persons to regulate the traffic when construction operations or traffic encroach on the public traffic lanes.

- C. Flares and Lights: Use flares and lights during the hours of low visibility to delineate the traffic lanes and to guide traffic.

##### D. Haul Routes:

1. Consult with the authority having jurisdiction, establish the public thoroughfares to be used for haul routes and site access.

##### E. Traffic Signs and Signals:

1. At approaches to the site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct the construction and affected public traffic.
2. Install and operate automatic traffic control signals to direct and maintain the orderly flow of traffic in areas under the Contractor's control, and areas affected by the Contractor's operations.
3. Relocate as the Work progresses, to maintain effective traffic control.

##### F. Removal:

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.
3. Remove post settings to a depth of 2 feet .

#### 1.16 BARRIERS

- A. Provide barriers to allow for the Owner's use of the site and to protect existing facilities and adjacent properties from damage from the construction operations, or demolition.

- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way, or for public access to the building.

- C. Provide protection for plants designated to remain. Replace damaged plants.

- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

### 1.17 ENCLOSURES AND FENCING

- A. Construction: Provide 6-ft. high commercial grade chain link fence around on-site equipment or areas of site disturbance for the period required to protect work and the public. Equip with vehicular and pedestrian gates with locks. Provide one set of keys to all gates and door locks to the Owner.
- A. Perform adjustment to the proposed layout as may be directed by the Owner.
- B. Interior Enclosures:
  - 1. Provide temporary partitions and ceilings as indicated to separate the work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to the existing materials and equipment.
  - 2. Construction: Framing and reinforced polyethylene, plywood, or gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces, as agreed with the Owner:
    - a. Maximum flame spread rating of 75 in accordance with ASTM E84.

### 1.18 SECURITY

- A. Security Program:
  - 1. Protect the Work, the existing premises, or the Owner's operations from theft, vandalism, and unauthorized entry.
  - 2. Initiate the program in coordination with the Owner's existing security system at mobilization.
  - 3. Maintain the program throughout the construction period until Owner occupancy of each designated area.
- B. Entry Control: Coordinate the access of the Owner's personnel to the site in coordination with the Owner's security forces.

### 1.19 FIRE DETECTION

- A. Before beginning any construction operation that can potentially trigger the existing fire alarm detection system, notify the Owner through use of the form provided in Section 01 1020.
- B. Failure to so notify the Owner will subject the Contractor to a monetary fine for each occurrence, should the fire detection system be activated inadvertently by a construction activity.
- C. Comply with FM Global insurance underwriting standards and insurer recommendations for Hot Work, sprinkler impairment, and site maintenance.



## 1.20 WATER CONTROL

- A. Grade the site to drain. Maintain excavations free of water. Provide, operate, and maintain the pumping equipment.
- B. Protect the site from puddling or running water. Provide water barriers as required to protect the site from soil erosion.

## 1.21 DUST CONTROL

- A. Execute the Work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.

## 1.22 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize the amount of bare soil exposed at one time.
- C. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- E. Periodically inspect the earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

## 1.23 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by the construction operations.

## 1.24 PEST CONTROL

- A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work, or entering the facility.

## 1.25 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent the contamination of soil, water, and the atmosphere from discharge of noxious, toxic substances, and pollutants produced by the construction operations.

1.26 RODENT CONTROL

- A. Provide methods, means, and facilities to prevent rodents from accessing or invading the premises.

1.27 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials, prior to Substantial Completion.
- B. Remove the underground installations to a minimum depth of 2 feet. Grade the site as indicated.
- C. Clean and repair the damage caused by installation or use of temporary work.
- D. Restore the existing and new facilities used during construction to their original condition.
- E. Restore any temporary exterior laydown or storage areas to the original condition. After each use, regrade and reseed as required to meet this requirement.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

**END OF SECTION**

**01 5010 TEMPORARY FACILITIES AND CONTROLS - ATTACHMENT A**

1.01 SECTION INCLUDES

- A. No Variations in this section for this Project.

**END OF ATTACHMENT**

**SECTION 01 6000 - PRODUCT REQUIREMENTS****PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.

**1.02 PRODUCTS**

- A. Products: Means new material, machinery, components, fixtures, or systems forming the Work; but does not include the machinery or equipment used for the preparation, fabrication, conveying, or erection of the Work. Products may include the existing materials or components required or specified for reuse.
- B. Furnish products of qualified manufacturers suitable for the intended use. Furnish products of each type by a single manufacturer unless specified otherwise.
- C. Do not use materials and equipment removed from the existing premises, except as specifically permitted by the Contract Documents.
- D. Furnish interchangeable components of the same manufacturer for the components being replaced.

**1.03 PRODUCT DELIVERY REQUIREMENTS**

- A. Transport and handle products in accordance with the manufacturer's instructions.
- B. Promptly inspect shipments to ensure that the products comply with the requirements, the quantities are correct, and the products are undamaged.
- C. Provide equipment and personnel to handle the products by methods to prevent soiling, disfigurement, or damage.

**1.04 PRODUCT STORAGE AND HANDLING REQUIREMENTS**

- A. Store and protect the products in accordance with the manufacturers' instructions.

- B. Store with seals and labels intact and legible.
- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to the product.
- D. For exterior storage of fabricated products, place on sloped supports above the ground.
- E. Provide bonded off-site storage and protection when the site does not permit on-site storage or protection.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent the condensation and degradation of products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store the products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of the products to permit access for inspection. Periodically inspect to verify that the products are undamaged and are maintained in acceptable condition.

#### 1.05 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of the manufacturers named and meeting the specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

#### 1.06 PRODUCT SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify the time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.
- B. Substitutions may be considered after the bid only in the following circumstances:
  - 1. when a product becomes no longer in production following the date of receipt of the Purchase Order for this Contract. Submit certification both that specified product was carried in Bid, and is no longer obtainable. Provide cost change documentation.
  - 2. there is a significant cost savings offered to the Owner. Provide price comparison of both bid and offered substitution products as well as all collateral costs of the change.

3. Code changes or site conditions require a different item from that bid. Submit as for 2 above.
- C. Document each request with complete data substantiating the compliance of a proposed Substitution with the Contract Documents.
- D. A request constitutes a representation that the Bidder:
1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified product.
  2. Will provide the same warranty for the Substitution as for the specified Product.
  3. Will coordinate the installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner, including redesign.
  4. Waives claims for additional costs or time extension which may subsequently become apparent.
  5. Will reimburse the Owner and the Design Agent for review or redesign services, including those associated with re-approval by the authorities having jurisdiction.
- E. Substitutions will not be considered when they are indicated or implied on the Shop Drawing or Product Data submittals, without a separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure, If Permitted Following Contract Award:
1. Submit three copies of a request for Substitution for consideration, no later than 20 working days following date of receipt of the Purchase Order for this Contract. Limit each request to one proposed Substitution.
  2. Submit the Shop Drawings, Product Data, and the certified test results attesting to the proposed product equivalence. The burden of proof is on the proposer.
  3. The Design Agent will notify the Contractor in writing of a decision to accept or reject the request. Costs for review time on unsuccessful requests will be included in the next change order.

## **PART 2 - PRODUCTS**

Not Used.

## **PART 3 - EXECUTION**

Not Used.

## **END OF SECTION**

**016010 PRODUCT REQUIREMENTS - Attachment A**

1.01 SECTION INCLUDES

- A. No Variations in this section for this Project.

**END OF ATTACHMENT**



**SECTION 01 7000 - EXECUTION REQUIREMENTS****PART 1 - GENERAL**

## 1.01 SECTION INCLUDES

- A. Examination.
- B. Preparation.
- C. Field Engineering.
- D. Protection of adjacent construction.
- E. Cutting and patching.
- F. Special procedures.
- G. Starting and adjusting of systems.
- H. Demonstration and Instructions.
- I. Testing, adjusting and balancing.
- J. Protecting Installed Construction.

## 1.02 EXAMINATION

- A. Acceptance of Conditions:
  - 1. Verify that existing applicable site conditions, substrates, or substrate surfaces are acceptable or meet specific requirements of individual specifications Sections, for subsequent Work to proceed.
  - 2. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
  - 3. Examine and verify specific conditions described in individual specifications Sections.
  - 4. Verify that utility services are available, of correct characteristics, and in correct locations.
  - 5. Beginning of new Work, that relies upon the quality and proper execution of Work of a preceding trade, means acceptance of that preceding Work as appropriate for the proper execution of subsequent Work.
  - 6. Acceptance of preceding Work that can be shown later to have adversely affected proper performance of new Work may result in removal and repeat performance of all Work involved at no cost to the Owner.

**1.03 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply substrate primer, sealer, or conditioner, required or recommended by manufacturer, prior to applying any new material or substance in contact or bond.
- D. Prior to the application, installation, or erection of any products and product components, perform any other preparatory operations, or surface or substrate modifications, as may be specified or directed by product manufacturers.

**1.04 FIELD ENGINEERING**

- A. Employ a Land Surveyor registered in the State of Rhode Island and acceptable to Design Agent and the Owner if required by subgrade work.
- B. Locate and protect survey control and reference points. Promptly notify Design Agent of any discrepancies discovered.
- C. Control Datum for survey is to be agreed to with the Design Agent.
- D. Verify setbacks and easements, if any; confirm drawing dimensions and elevations.
- E. Provide field-engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- F. Submit a copy of site drawings and certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with the Contract Documents.
- G. Maintain a complete and accurate log of control and survey work as it progresses.
- H. If required by the Owner, on completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.
- I. Protect survey control points prior to starting site work; preserve permanent reference point during construction.
- J. Promptly report to Design Agent the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- K. Replace dislocated survey control point based on original survey control. Make no changes without prior written notice to Design Agent.

**1.05 PROTECTION OF ADJACENT CONSTRUCTION**

- A. Protect existing adjacent properties and provide special protection where specified in individual Specification Sections.
- B. Provide protective coverings at wall, projections, jambs, sills, and soffits of existing openings.
- C. Protect existing finished floors, stairs, and other existing surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- D. Cover and protect furnishings, materials and equipment within the spaces receiving new work. Move items as necessary to install new work and return them to original locations at the close of construction in that area.
- E. Repair adjacent properties damaged by construction operations to original condition to the satisfaction of the Owner.
- F. Prohibit unnecessary traffic from existing landscaped areas.
- G. Restore grassed landscaped areas damaged by construction operations to full healthy growth, by installing loam and sod to the requirements, and under the supervision of, the University's Associate Director of Lands and Grounds.

**1.06 CUTTING AND PATCHING**

- A. Employ skilled and experienced installers to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affect:
  - 1. Structural integrity of element.
  - 2. Integrity of weather-exposed or moisture-resistant elements.
  - 3. Efficiency, maintenance, or safety of element.
  - 4. Visual qualities of sight-exposed elements.
  - 5. Existing construction, or Work of separate contractor.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
  - 1. Fit the several parts together, to integrate with other Work.
  - 2. Uncover Work to install or correct ill-timed Work.
  - 3. Remove and replace defective and non-conforming Work.
  - 4. Remove samples of installed Work for testing.
  - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

- D. Execute Work by methods that will avoid damage to other Work, and provide proper surfaces to receive patching and finishing.
- E. Cut masonry, concrete, and other rigid materials using masonry saw or core drill.
- F. Remove ceiling tiles as necessary to access areas of work. Store and replace carefully to avoid damage. Replace all ceiling tiles damaged during the work with new tiles to match. Repair ACT grid damaged during the work in accordance with this section.
- G. Restore Work with new Products in accordance with requirements of Contract Documents.
- H. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.
- I. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- J. At penetration of fire rated partitions, ceiling, or floor construction, completely seal voids with fire rated or fire resistant material in accordance with Specifications, to full thickness of the penetrated element.
- K. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- L. Identify any hazardous substance or conditions exposed during the Work to the Owner and Design Agent for decision or remedy.
- M. See General Conditions for additional requirements.

#### 1.07 SPECIAL PROCEDURES

- A. Materials: As specified in product Sections; match existing with new products, or salvaged products as appropriate, for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.

- F. Prepare surface and remove surface finishes to provide installation of new Work and finishes.
- G. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to original or specified condition.
- I. Refinish existing visible surfaces to remain in renovated rooms and spaces to specified condition for each material, with a neat transition to adjacent finishes.
- J. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- K. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Design Agent for review.
- L. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition to Design Agent for review.
- M. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.
- N. Patch or replace portions of existing surfaces which are damaged, or showing other imperfections.
- O. Finish surfaces as specified in individual product Sections, or as indicated on the Drawings.

#### 1.08 STARTING AND ADJUSTING OF SYSTEMS

- A. Coordinate schedule for starting and adjusting of various equipment and systems.
- B. Notify Design Agent and Owner seven days prior to starting and adjusting of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.

- F. Execute starting and adjusting under supervision of responsible Contractor's personnel or manufacturer's representative, in accordance with manufacturer's instructions.
- G. Adjust operating Products and equipment to ensure smooth and unhindered operation.
- H. When specified in individual specifications Section, require manufacturer to provide authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to starting, and to supervise placing of equipment or system in operation.
- I. Submit a written report in accordance with Section 01400 that equipment or system has been properly installed and is functioning correctly.

#### 1.09 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manuals with Owner's personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate start-up, operation, control, adjustment, trouble shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled or agreed upon times, at equipment or system location.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

#### 1.10 TESTING, ADJUSTING, AND BALANCING

- A. Submit, for the Owner's approval, the name of an independent firm to perform testing of fire systems. The independent firm's services will be paid for by the Contractor.
- B. The independent firm will perform services specified in individual specifications Sections.
- C. Reports will be submitted by the independent firm to the Design Agent and the Owner indicating observations and test results, indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

**1.11 PROTECTING INSTALLED CONSTRUCTION**

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Repair or replace installed Work damaged by construction operations, as directed by the Design Agent.

**PART 2 - PRODUCTS**

Not Used.

**PART 3 - EXECUTION**

Not Used.

**END OF SECTION**

**01 7010 EXECUTION REQUIREMENTS - Attachment A**

A. Daily Attendance Form

1. Maintain Daily Attendance Form acceptable to the Department of Labor and Training for all projects with a contract value over \$1Million. Submit as requested.

**END OF ATTACHMENT**



**SECTION 01 7320****WASTE MANAGEMENT****PART 1 GENERAL****1.01 WASTE MANAGEMENT REQUIREMENTS**

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
  - 1. Aluminum and plastic beverage containers.
  - 2. Corrugated cardboard.
  - 3. Wood pallets.
  - 4. Clean dimensional wood: May be used as blocking or furring.
  - 5. Land clearing debris, including brush, branches, logs, and stumps.
  - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
  - 7. Glass.
  - 8. Gypsum drywall and plaster.
  - 9. Plastic buckets.
  - 10. Paper, including wrapping, newsprint, and office.
- E. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports. Submit in accordance with Section 01 3300.
- F. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- G. Methods of trash/waste disposal that are not acceptable are:
  - 1. Burning on the project site.
  - 2. Burying on the project site.
  - 3. Dumping or burying on other property, public or private.
  - 4. Other illegal dumping or burying.
- H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 7000 - Execution Requirements: Trash/waste prevention procedures related to

demolition, cutting and patching, installation, protection, and cleaning.

### 1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

### 1.04 SUBMITTALS

- A. See Section 01 3300 for submittal procedures.
- B. Waste Management Plan: Include the following information:
  - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
  - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
  - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
  - 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.

5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
  6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
- C. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
  2. Submit Report on a form acceptable to Owner.
  3. Landfill Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
    - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  4. Incinerator Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
    - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  5. Recycled and Salvaged Materials: Include the following information for each:
    - a. Identification of material, including those retrieved by installer for use on other projects.
    - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
    - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
    - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
  6. Material Reused on Project: Include the following information for each:
    - a. Identification of material and how it was used in the project.
    - b. Amount, in tons or cubic yards.
    - c. Include weight tickets as evidence of quantity.
  7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

## **PART 2 PRODUCTS (not used)**

## **PART 3 EXECUTION**

### **3.01 WASTE MANAGEMENT PROCEDURES**

- A. See Section 01 1000 for list of items to be salvaged from the existing building for relocation in project or for Owner.

- B. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.
- D. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
- E. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

### **3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- A. **Manager:** Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. **Communication:** Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, Owner's Recycling and Solid Waste Coordinator, and Design Agent.
- C. **Instruction:** Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. **Meetings:** Discuss trash/waste management goals and issues at project meetings.
  - 1. Pre-bid meeting.
  - 2. Pre-construction meeting.
  - 3. Regular job-site meetings.
- E. **Facilities:** Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
  - 1. Provide containers as required.
  - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
  - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. **Hazardous Wastes:** Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. **Recycling:** Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. **Reuse of Materials On-Site:** Set aside, sort, and protect separated products in preparation for reuse.
- I. **Salvage:** Set aside, sort, and protect products to be salvaged for reuse off-site.

**END OF SECTION**

**01 7330 WASTE MANAGEMENT - Attachment A**

1.01 SECTION INCLUDES

- A. No Variations in this section for this Project.

**END OF ATTACHMENT**

**SECTION 01 7800 - CLOSEOUT REQUIREMENTS****PART 1 - GENERAL**

## 1.01 SECTION INCLUDES

- A. Closeout procedures.
- B. Quality assurance.
- C. Maintenance service.
- D. Operations and maintenance manuals.
- E. Materials and finishes manuals.
- F. Equipment and systems manuals.
- G. Spare parts and maintenance materials.
- H. Product warranties and product bonds.
- I. Project Record documents.

## 1.02 CLOSEOUT PROCEDURES

- A. Submit a written certification that the Contract Documents have been reviewed, the Work has been inspected, and that the Work is complete in accordance with the Contract Documents and is ready for the Owner's review.
- B. Provide submittals to Design Agent that are required by governing or other authorities, including abatement invoices correctly prepared as proscribed in the abatement plan. Failure to include correctly prepared abatement invoices will delay issuing of final payment.
- C. Provide submittals to Design Agent that are required by the governing or other authorities, including the following closeout documents:
  - 1. AIA Document G706 - Contractor's Affidavit of Payment of Debts and Claims
  - 2. AIA Document G706A - Contractor's Affidavit of Release of Liens
  - 3. AIA Document G707 - Consent of Surety to Final payment
- D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

- E. The Owner will occupy all portions of the building after Substantial Completion as specified in Section 01 1000.

#### 1.03 QUALITY ASSURANCE

- A. Employ personnel assembling submittals experienced in the maintenance and the operation of the described products and systems.

#### 1.04 MAINTENANCE SERVICE

- A. Submit a contract for furnishing service and maintenance of the components indicated in the specification Sections for one year from date of Substantial Completion, or during the warranty period, whichever period of time is the longest.
- B. Provide for an examination of the system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- C. Include a systematic cleaning, examination, adjustment, and lubrication of the components. Repair or replace the parts whenever required. Use the parts produced by the manufacturer of the original component.
- D. Do not assign or transfer the maintenance service to an agent or Subcontractor without the prior written consent of the Owner.

#### 1.05 OWNER'S MANUALS

- A. Submit the data for Operations and Maintenance, Materials and Finishes, and Equipment and Systems Manuals bound in 8-1/2 x 11 inch text pages, in minimum 2 inch size three D side ring commercial quality binders with durable cleanable plastic covers.
- B. Prepare binder covers with the printed title of the manual, title of the project, and the subject matter of binder. Label each spine with the following: Building, project or facility name, OCP project number, submission date.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Drawings: Provide with reinforced punched binder tab. Bind in with the text; fold the larger drawings to the size of the text pages.
- E. Submit two copies of a preliminary draft of the proposed formats and outline of the contents before the start of work. The Design Agent and its consultants will review drafts and return one copy with comments.

- F. Submit one copy of the completed volumes 15 days prior to final inspection for final review. This copy will be reviewed and returned after final inspection, with the Design Agent's comments. Revise the content of the document sets as required prior to final submission.
- G. Submit three sets of revised final volumes plus electronic copy in final form within ten days after final inspection.

#### 1.06 OPERATIONS AND MAINTENANCE MANUALS

- A. Contents: Prepare the Table of Contents for each volume, with each product or system description identified, in three parts as follows:
  - 1. **Part 1:** Directory, listing the names, addresses, and telephone numbers of the Design Agent, its Consultants, Contractor, Subcontractors, and major equipment suppliers.
  - 2. **Part 2:** Operation and maintenance instructions, arranged by system and subdivided by the specification Section. For each category, identify the names, addresses, and telephone numbers of the Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions.
    - e. Maintenance instructions for equipment and systems.
    - f. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
  - 3. **Part 3:** Project documents and certificates, including the following:
    - a. Shop drawings and product data.
    - b. Air and water balance reports.
    - c. Certificates.
    - d. Originals of warranties and bonds.
  - 4. **Part 4:** Scan entire manual and provide 3 copies on disc in electronic PDF format.

#### 1.07 MATERIALS AND FINISHES MANUALS

- A. Building Products, Applied Materials, and Finishes: Include product data, with the catalog number, size, composition, and the color and texture designations. Include information for re-ordering custom manufactured products.
- B. Instruction for Care and Maintenance: include manufacturer's instructions for cleaning agents and methods, precautions against detrimental agents and methods, and a recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in the individual product specification Sections.



- E. Include a listing in the Table of Contents for design data, with a tabbed flysheet and a space for the insertion of data.

#### 1.08 EQUIPMENT AND SYSTEMS MANUALS

- A. For equipment, or component parts of equipment put into service during construction and operated by the Owner, submit documents within 10 days after acceptance.
- B. Each Item of Equipment and Each System: Include a description of the unit or system, and the component parts. Identify the function, normal operating characteristics, and limiting conditions. Include performance curves, with priming data and tests, and complete nomenclature and model number of replaceable parts.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color-coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Include a servicing and lubricating schedule, and a list of lubricants required.
- H. Include the manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by the controls manufacturer.
- J. Include the original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Include control diagrams by the controls manufacturer as installed.
- L. Include the Contractor's coordination drawings, with color-coded piping diagrams as installed.
- M. Include charts of valve tag numbers, with the location and function of each valve, keyed to the flow and control diagrams.
- N. Include a list of the original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports as specified in Section 01400.

- P. Additional Requirements: As specified in the individual product specification Sections.

#### 1.09 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Furnish spare parts, maintenance, and extra products (attic stock) in the quantities specified in the individual specification Sections.
- B. Deliver to the Project site and place in a location as directed by the Owner; obtain a receipt prior to final payment.

#### 1.10 PRODUCT WARRANTIES AND PRODUCT BONDS

- A. Obtain warranties and bonds executed in duplicate by the responsible subcontractors, suppliers, and manufacturers, within 10 days after the completion of the applicable item of work.
- B. Execute and assemble the transferable warranty documents and bonds from the subcontractors, suppliers, and manufacturers.
- C. Verify that the documents are in the proper form, contain full information, and are notarized.
- D. Co-execute the submittals when required.
- E. Include in the Operations and Maintenance Manuals within the appropriate material specification section.
- F. Submit prior to the final Application for Payment. For items of Work for which acceptance is delayed beyond the Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty or bond period.

#### 1.11 PROJECT RECORD DOCUMENTS

- A. Maintain on the site one set of the following record documents; record actual revisions of the Work for all trades:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Manufacturer's instructions for assembly, installation, and adjusting.
- B. Ensure the entries are complete and accurate, enabling future reference by the Owner.
- C. Store the record documents separate from the documents used for construction.

- D. Record information concurrent with the construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product Section description of the actual products installed, including the following:
1. Manufacturer's name and product model and number.
  2. Product substitutions or alternates utilized.
  3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record the actual construction including:
1. Measured horizontal and vertical locations of the underground utilities and appurtenances, referenced to permanent surface improvements. Include the locations and description of any existing utility lines and other existing installations of any kind or description encountered during construction. Note all changes in size, material, location, and elevation of all new or abandoned underground utility lines and pertinent work, including site grading. Document topography and drainage changes. Show the location of all valves, manholes, etc. and include dimensions to permanent features such as building corners. Note direction of each new valve opening. Show clearances between new utilities and existing crossed lines. Locate all bends, thrust blocks, and other restraints.
  2. The placement, size, and type of any fire extinguishers.
  3. Measured locations of internal utilities and appurtenances concealed in the construction.
  4. Field changes of dimension and detail.
  5. Details not on the original Contract drawings.
- G. Legibly marked Specifications, and legibly marked Record Drawings and Shop Drawings shall constitute the Project Record Documents in paper form.
- H. At completion of the Work of the Contract, the Contractor shall retain competent drafting personnel to transfer the information from the Project Record Documents in paper form to editable electronic formats to create "As-Built" Documents on base files provided by the Design Agent. The record construction drawings shall be produced in both AutoCAD format plus a record PDF copy of each drawing. AutoCAD files shall include all XREF, font, image, shape, and plot files. PDF files shall be saved full sheet size. The record Project Manual shall be in Microsoft Word form plus a record PDF of the entire manual. The electronic media containing this information will constitute the Project Record Documents in digital form, sometimes referred to as the "As-Built" Documents. Acceptable media are write-protected CD-R format discs or flash drives. Submit one full size printed set of drawings and specifications on 20 lb. white bond made from the As-Built files in addition to the electronic media.
- I. Associated materials including but not limited to the following are also required to be submitted at project close-out: shop drawings and cut sheets, RFIs, correspondence and meeting minutes, LEED scorecards, construction progress photographs, DEM permits including generator permits, certificates including Final Certificate of Occupancy, boiler and elevator certificates, easement rights, National Grid Rebate Applications, test and inspection documentation including fire pump test data, asbestos abatement plans and manifests. These materials may be

submitted in either paper or PDF digital format, organized by specification number, and clearly labeled. If paper copies are submitted, each box must be clearly labeled as to specific contents.

- J. If the project required geotechnical, archeological, or other miscellaneous studies or other reports, these shall also be submitted as Record Document in either paper or digital format.
- K. Labeling: In all cases, paper or digital submissions must contain the following information: Building, project or facility name, OCP Project number, submission date, and specific content index.
- L. No review or receipt of Project Record Documents by the Design Agent or the Owner shall be interpreted as a waiver of any deviation from the Contract Documents or Shop Drawings, or in any way relieve the Contractor from responsibility to perform the Work in accordance with the Contract Documents and the Shop Drawings.
- M. Update the on-site Project Record Documents on a regular basis. Monthly payments will not be processed if Project Record Documents are not maintained up to date.

**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used.

**END OF SECTION**

**01 7810 CLOSEOUT REQUIREMENTS - Attachment A**

1.01 SECTION INCLUDES

- A. No Variations in this section for this Project.

**END OF ATTACHMENT**

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Demolition and removal of selected portions of building or structure.
  - 2. Demolition and removal of selected site elements.
  - 3. Salvage of existing items to be reused or recycled.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
  - 2. Section 017010 "Execution" for cutting and patching procedures.

#### 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.
- E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

#### 1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.5 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site.
  - 1. Inspect and discuss condition of construction to be selectively demolished.
  - 2. Review structural load limitations of existing structure.
  - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
  - 5. Review areas where existing construction is to remain and requires protection.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control.
  - 1. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
    - a. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
- C. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations.
- D. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

- A. Perform work in conformity with requirements of applicable local ordinances, regulations and codes.

1.9 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

- C. Storage or sale of removed items or materials on-site is not permitted.
- D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 WARRANTY

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

1.11 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition.



1. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition information provided by Owner.
1. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- D. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs or video and templates.
1. Inventory and record the condition of items to be removed and salvaged.
    - a. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

#### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Arrange to shut off utilities with utility companies and provide required notice to Owner.
  2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  3. Disconnect, demolish, and remove plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

- b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.

### 3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
  - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015010 "Temporary Facilities and Controls."
- B. Remove temporary barricades and protections where hazards no longer exist.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
    - a. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 3. Do not use cutting torches until work area is cleared of flammable materials.
    - a. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations.

- b. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Maintain fire watch during and for time period required by local authorities after flame-cutting operations.
  5. Maintain adequate ventilation when using cutting torches.
  6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  8. Dispose of demolished items and materials promptly. Comply with requirements in Section 017330 "Waste Management"
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Owner.
  4. Transport items to Owner's storage area designated by Owner.
  5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.
  4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.
1. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain.
1. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete.

2. Neatly trim openings to dimensions indicated.

- B. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings." Do not use methods requiring solvent-based adhesive strippers.

### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  4. Comply with requirements specified in Section 017330 "Waste Management"
- B. Burning: Do not burn demolished materials.

### 3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.8 SELECTIVE DEMOLITION SCHEDULE

- A. Refer to the Drawings for items to be removed, removed and salvaged, removed and reinstalled, existing to remain, and items to be dismantled.

END OF SECTION 024119

## SECTION 032000 - CONCRETE REINFORCING

### 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. Welded-wire reinforcement.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For the following:
  - 1. Each type of steel reinforcement.
- B. Shop Drawings: Comply with ACI SP-066:
  - 1. Include placing drawings that detail fabrication and placement.
  - 2. Include size, materials, grades, location of splices, and supports for concrete reinforcement.
- C. Construction Joint Layout: Indicate proposed construction joints required to build the structure.
  - 1. Location of construction joints is subject to approval of the Architect.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
  - 1. Store reinforcement to avoid contact with earth.

### PART 2 - PRODUCTS

#### 2.1 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, plain, fabricated from as-drawn steel wire into flat sheets.
- B. Galvanized-Steel Welded-Wire Reinforcement: ASTM A1064/A1064M, plain, fabricated from galvanized-steel wire into flat sheets.

2.2 REINFORCEMENT ACCESSORIES

2.3 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

3.2 INSTALLATION OF STEEL REINFORCEMENT

- A. Comply with CRSI's "Manual of Standard Practice" for placing and supporting reinforcement.
- B. Accurately position, support, and secure reinforcement against displacement.
- C. Provide concrete coverage in accordance with ACI 318.
- D. Install welded-wire reinforcement in longest practicable lengths.
  - 1. Support welded-wire reinforcement in accordance with CRSI "Manual of Standard Practice."
    - a. For reinforcement less than W4.0 or D4.0, continuous support spacing shall not exceed 12 inches.
  - 2. Lap edges and ends of adjoining sheets at least one mesh spacing plus 2 inches for plain wire and 8 inches for deformed wire.
  - 3. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.
  - 4. Lace overlaps with wire.

3.3 JOINTS

- A. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
  - 1. Continue reinforcement across construction joints unless otherwise indicated.

3.4 INSTALLATION TOLERANCES

- A. Comply with ACI 117.

END OF SECTION 032000

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Cast-in-place concrete piers to support wood ramps.
  - 2. Exterior Concrete stairs and pad at exterior doors.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **Project site**.
  - 1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Concrete Subcontractor.
  - 2. Review the following:
    - a. Special inspection and testing and inspecting agency procedures for field quality control.
    - b. Construction joints, control joints, isolation joints, and joint-filler strips.
    - c. Anchor rod and anchorage device installation tolerances.
    - d. Cold and hot weather concreting procedures.
    - e. Concrete finishing.
    - f. Curing procedures.
    - g. Forms
    - h. Concrete repair procedures.
    - i. Concrete protection.

## 1.5 ACTION SUBMITTALS

## A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement
7. Aggregates.
8. Admixtures:
  - a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
9. Curing materials.
10. Repair materials.

## B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.
6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Steel-fiber reinforcement content.
10. Synthetic micro-fiber content.
11. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
12. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
13. Include certification that dosage rate for permeability-reducing admixture matches dosage rate used in performance compliance test.
14. Intended placement method.
15. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

## 1.6 INFORMATIONAL SUBMITTALS

## A. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

## B. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.



2. Admixtures.
  3. Fiber reinforcement.
  4. Curing compounds.
  5. Bonding agents.
  6. Adhesives.
  7. Repair materials.
- C. Material Test Reports: For the following, from a qualified testing agency:
1. Portland cement.
  2. Fly ash.
  3. Slag cement.
  4. Blended hydraulic cement.
  5. Silica fume.
  6. Performance-based hydraulic cement.
  7. Aggregates.
  8. Admixtures:
    - a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.
- D. Research Reports: For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
- E. Preconstruction Test Reports: For each mix design.
- F. Field quality-control reports.

#### 1.7 QUALITY ASSURANCE

- A. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated, and employing an ACI-certified Concrete Quality Control Technical Manager.
1. Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.
- C. Field Quality Control Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests shall be qualified as an ACI Concrete Field Testing Technician, Grade 1, in accordance with ACI CPP 610.1 or an equivalent certification program.

#### 1.8 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.
  1. Include the following information in each test report:
    - a. Admixture dosage rates.
    - b. Slump.
    - c. Air content.
    - d. Seven-day compressive strength.
    - e. 28-day compressive strength.
    - f. Permeability.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and ACI 301.

#### 1.10 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.
  1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  3. Do not use frozen materials or materials containing ice or snow.
  4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
  5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:
  1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301.

## 2.2 CONCRETE MATERIALS

### A. Source Limitations:

1. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
2. Obtain aggregate from single source.
3. Obtain each type of admixture from single source from single manufacturer.

### B. Cementitious Materials:

1. Portland Cement: ASTM C150, Type I. Supplement with the following:
  - a. Fly Ash: ASTM C 618, Class F or C
  - b. Ground granulated blast-furnace slag. ASTM C989, Grade 100 or 120.
  - c. Use of supplemental cementitious materials may be rejected by the Architect of Record for certain applications on the project.
  - d.
2. Blended Hydraulic Cement: ASTM C595 Type IS, portland blast-furnace slag Type IP, portland-pozzolan, Type I (PM) pozzolan-modified Portland, Type I (SM) slag-modified Portland cement. Use of a blended hydraulic cement may be rejected by the Architect of Record for certain applications on the project.
3. Silica Fume: ASTM C1240 amorphous silica.

### C. Normal-Weight Aggregates: ASTM C33, coarse aggregate or better, graded. Select grading class per type of construction or location used and in relation to specific weathering region. Provide aggregates from a single source.

### D. Air-Entraining Admixture: ASTM C260.

### E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C494, Type A.
2. Retarding Admixture: ASTM C494, Type B.
3. Water-Reducing and -Retarding Admixture: ASTM C494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017, Type II.

### F. Water: ASTM C94/C94M, potable

## 2.3 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301 and ACI 318

chapter 5. Design mixtures shall meet the minimum requirements tabulated in the construction documents.

- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag and silica fume as needed. Limit percentage, by weight, of cementitious materials other than Portland cement in concrete per ACI 301 requirements for concrete exposed to deicing chemicals. Requirements of table 4.2.2.1 of ACI 301 shall be adhered to.
- C. Admixtures: Use admixtures in accordance with manufacturer's written instructions.
  - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

## 2.4 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete in accordance with ASTM C94/C94M. Mix concrete materials in appropriate drum-type batch machine mixer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verification of Conditions:
  - 1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
  - 2. Do not proceed until unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION OF EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
  - 1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
  - 3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

### 3.3 CONCRETE PLACEMENT

- A. Do not add water to concrete during delivery, at Project site, or during placement. Add water at project site only as indicated on the concrete delivery ticket and prior to beginning placement.

### 3.4 CONCRETE CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
  - 1. Comply with ACI 301, ACI 305, ACI 306 and ACI 306.1 as applicable.

### 3.5 TOLERANCES

- A. Conform to ACI 117.

### 3.6 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.
- B. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements:
  - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
    - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  - 2. Slump: ASTM C143/C143M:
    - a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    - b. Perform additional tests when concrete consistency appears to change.
  - 3. Air Content: ASTM C231 or ASTM C173.
    - a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  - 4. Compression Test Specimens: ASTM C31/C31M:
    - a. Cast and laboratory cure two sets of three 6-inch by 12-inch cylinder specimens for each composite sample.
  - 5. Compressive-Strength Tests: ASTM C39/C39M.

- a. Test one set of two laboratory-cured specimens at seven days and one set of two specimens at 28 days.
  - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
6. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
  7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 1 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
  8. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
  9. Additional Tests:
    - a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
  10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

## SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

## A. Section Includes:

1. Dimension lumber blocking.
2. Non-load bearing wood studs
3. Wood blocking, cants, and nailers.
4. Blocking for the following items:
  - a. Casework and shelving.

## B. Related Requirements:

1. Section 092900 "Gypsum Board Assemblies" for installation of wood blocking in metal stud framing system.

## 1.3 DEFINITIONS

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

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
  1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
  2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
  3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

B. Shop Drawings: For miscellaneous rough carpentry.

1. Show extent of miscellaneous rough carpentry on plans and elevations using designations from the Drawings and Specifications.
  - a. Show location and layout of each different type of miscellaneous carpentry item (blocking and backer panels) adequately dimensioned and detailed.
  - b. Show locations of miscellaneous carpentry (blocking and backer panels) used for attachment of other construction, building, and finish systems. Include sizes, spacing, and orientation of typical members.
  - c. Show locations where pressure-preservative-treated and fire-retardant-treated wood are required. Coordinate locations with fire rated and smoke barrier partitions.
2. Include dimensioned plans, elevations, sections, details, attachment devices, other components and details of attachments to other work.
3. Include details of typical and special conditions.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.
4. Post-installed anchors.

#### 1.6 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  1. Identify the product, fabrication method or installation method to be modified or replaced.
  2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.



- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

## 1.7 QUALITY ASSURANCE

- A. 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.

## 1.8 DELIVERY, STORAGE, AND HANDLING

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

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
  - 3. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.
- C. Wood Structural Panels:
  - 1. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.
  - 2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
  - 3. Comply with "Code Plus" provisions in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
  - 4. Factory mark panels according to indicated standard.

## 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
  2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat all miscellaneous carpentry unless otherwise indicated.
1. Wood cants, nailers, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
  2. Wood blocking and similar concealed members in contact with masonry or concrete.
  3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.

## 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
1. Treatment shall not promote corrosion of metal fasteners.
  2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
  3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

4. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D 5664, and design value adjustment factors shall be calculated according to ASTM D 6841.
- C. Kiln-dry lumber after treatment to a maximum moisture content of 15 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.
- F. Application: Treat all miscellaneous carpentry, and exterior rough carpentry that is part of a non-combustible construction assembly, unless otherwise indicated.
1. Dimension lumber wood blocking, equipment support, and similar members.
    - a. Provide blocking and nailers for roofing system that comply with Factory Mutual Loss Prevention Data 1-49.
  2. Concealed blocking.
  3. Wood nailers, blocking, and similar members in connection with roofing.

#### 2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
  2. Nailers.
  3. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of the following species:
1. Hem-fir (north); NLGA.
  2. Mixed southern pine or southern pine; SPIB.
  3. Spruce-pine-fir; NLGA.
- C. Concealed Boards: 15 percent maximum moisture content of the following species and grades:
1. Mixed southern pine or southern pine, No. 2 grade; SPIB.
  2. Hem-fir or hem-fir (north), Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
  3. Spruce-pine-fir (south) or spruce-pine-fir, Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

## 2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M and of Type 304 stainless steel where required by State Building Code.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Screws for Fastening to Metal Framing: ASTM C 1002 and ASTM C 954, length as recommended by screw manufacturer for material being fastened.
- D. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- E. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193 or ICC-ES AC308 as appropriate for the substrate.
  - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
  - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

## 2.6 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.

- B. Do not splice structural members between supports unless otherwise indicated.
- C. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
  - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- D. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- E. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
  - 1. Use inorganic boron for items that are continuously protected from liquid water.
  - 2. Use copper naphthenate for items not continuously protected from liquid water.
- F. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
  - 2. ICC-ES evaluation report for fastener.
- H. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

### 3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

## SECTION 061533 - WOOD DECKING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Wood decking.
  - 2. Railings for elevated decks.
  - 3. Support framing for elevated decks.

#### 1.3 DEFINITIONS

- A. Boards: Lumber of less than 2 inches nominal in thickness and 2 inches nominal or greater in width.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Timber: Lumber of 5 inches nominal or greater in least dimension.
- D. Lumber grading agencies, and the abbreviations used to reference them, include the following:
  - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
  - 2. NLGA: National Lumber Grades Authority.
  - 3. RIS: Redwood Inspection Service.
  - 4. SPIB: The Southern Pine Inspection Bureau.
  - 5. WCLIB: West Coast Lumber Inspection Bureau.
  - 6. WWPA: Western Wood Products Association.
  - 7. WRCLA: Western Red Cedar Lumber Association

#### 1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Wood Decking Subcontractor.
  - 2. Review the following:

- a. Orientation of deck boards
- b. Joint treatments
- c. Attachment methods

#### 1.5 ACTION SUBMITTALS

- A. Sample of wood product not less than 48 inches long
- B. Delegated-Design Submittal: For railings, including analysis data signed and sealed by the qualified professional engineer licensed in the State of Rhode Island who is responsible for their preparation.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Material Certificates:
  1. For lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by ALSC's Board of Review.
- B. Certificates of Inspection: Issued by lumber grading agency for exposed wood products not marked with grade stamp.
- C. Evaluation Reports: For the following, from ICC-ES:
  1. Metal framing anchors.
  2. Decking fasteners.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials under cover and protected from weather and contact with damp or wet surfaces. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

### PART 2 - PRODUCTS

#### 2.1 LUMBER, GENERAL

- A. Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.
  1. Factory mark each item with grade stamp of grading agency.
  2. For items that are exposed to view in the completed Work, mark grade stamp on back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.



3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
4. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content:

1. Boards: 15 percent.
2. Dimension Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness.
3. Timber: 19 percent

## 2.2 WOOD DECKING

- A. Hand select wood for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- B. Board Decking: 5-1/2-inch wide by 1-1/4-inch actual thickness radius-edged decking of the following species and grades:
  1. Genuine Mahogany

## 2.3 WOOD RAILINGS

- A. Hand select wood for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- B. Dimension Lumber Railing Members: Select Structural grade and the following species:
  1. Western red cedar; WCLIB or WRCLA.
- C. Railing Boards:
  1. Western red cedar; WCLIB or WRCLA.

## 2.4 METAL RAILING INFILL

- A. Base Bid – Extruded Aluminum Pipe:
  1. Basis of Design Product: King Architectural Metals, Dallas, TX
    - a. Size: Schedule 40 nominal 1/2" (0.840" O.D., 0.622" I.D and 0.109" wall thickness)
    - b. Finish: Powder Coat
    - c. Color: Selected by Architect from manufacturer's full range
- B. Add Alternate #3 – Seamless Type 316 Stainless Steel Pipe:
  1. Basis of Design Product: Penn Stainless Products, Inc., Quakertown, PA
  2. Size: Schedule 40 nominal 3/8" (0.675" O.D., 0.584" I.D and 0.091" wall thickness)
  3. Finish: None

## 2.5 HANDRAIL AND BRACKETS

- A. Handrail:
  - 1. Material: Western Red Cedar
  - 2. Size: 1-1/2" diameter
  
- B. Handrail Bracket:
  - 1. Provide the basis of design product or an approved equal.
  - 2. Basis of Design Product: Julius Blum model 1088 handrail bracket
    - a. Material: Type 304 stainless steel

## 2.6 RAILING PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer to design railings, including attachment to building construction.
  
- B. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  - 1. Handrails:
    - a. Uniform load of 50 lbf/ft. applied in any direction.
    - b. Concentrated load of 200 lbf applied at any point in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
  
  - 2. Top Rails:
    - a. Uniform load of 100 lbf/ ft. applied horizontally and concurrently with 100 lbf/ ft. applied vertically downward.
    - b. Concentrated load of 300 lbf applied at any point in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
  
  - 3. Railing Infill:
    - a. Concentrated load of 200 lbf applied horizontally on an area of 1 sq. ft.
    - b. Uniform load of 25 lbf/sq. ft. applied horizontally.
    - c. Infill load and other loads need not be assumed to act concurrently.

## 2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
  - 1. Use type 316 stainless steel fasteners.
  
- B. Nails: ASTM F1667.

- C. Power-Driven Fasteners: ICC-ES AC70.
- D. Wood Screws and Lag Screws: ASME B18.2.1, ASME B18.6.1, or ICC-ES AC233.
- E. Stainless-Steel Bolts: ASTM F593, Alloy Group 1 or 2; with ASTM F594, Alloy Group 1 or 2 hex nuts and, where indicated, flat washers.
- F. Postinstalled Anchors: Stainless-steel, chemical anchors with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing according to ASTM E488 conducted by a qualified independent testing and inspecting agency.
  - 1. Stainless-steel bolts and nuts complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

#### 3.3 INSTALLATION, GENERAL

- A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.
- C. Install wood decking with crown up (bark side down).
- D. Secure decking to framing with stainless steel Type 316 trim-head screws. Pre-drill for all screws to avoid splitting. Drive screws in until screw head is flush with the surface of the decking.
- E. Provide gapping in decking of 1/8" for 4-inch wide decking or 3/16" for 6-inch wide decking.
- F. Do not splice structural members between supports unless otherwise indicated.
- G. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

- H. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of members or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- I. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. ICC-ES AC70 for power-driven fasteners.
  - 2. "Fastening Schedule" in ICC's International Building Code.
  - 3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's International Residential Code for One- and Two-Family Dwellings.
- J. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced and with adjacent rows staggered.

#### 3.4 RAILING INSTALLATION

- A. Balusters: Fit to railings, glue and screw in place. Countersink fastener heads, fill flush, and sand filler.
- B. Newel Posts: Secure to stringers and risers with through bolts or countersunk-head wood screws and glue as indicated on drawings.

END OF SECTION 061533

## SECTION 062013 - EXTERIOR FINISH CARPENTRY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Exterior cellular PVC trim

- B. Related Requirements:

- 1. Section 061053 "Miscellaneous Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.

#### 1.3 DEFINITIONS

- A. MDO: Plywood with a medium-density overlay on the face.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.

- 1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
- 2. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

- B. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.

- C. Samples for Verification:

- 1. For cellular PVC trim, with half of exposed surface finished; 50 sq. in.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
  - 1. Cellular PVC trim
- B. Sample Warranties: For manufacturer's warranties.

## 1.6 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
  - 1. For exterior ornamental wood columns, comply with manufacturer's written instructions and warranty requirements.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## 1.7 WARRANTY

- A. Manufacturer's Warranty for Cellular PVC Trim: Manufacturer agrees to repair or replace trim that fails due to defects in manufacturing within specified warranty period. Failures include, but are not limited to, deterioration, delamination, and excessive swelling from moisture.
  - 1. Warranty Period: 25 years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 EXTERIOR TRIM

- A. Cellular PVC Trim, General: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized rigid material.
  - 1. Density: Not less than 31 lb/cu. ft.
  - 2. Heat Deflection Temperature: Not less than 130 deg F, according to ASTM D 648.
  - 3. Coefficient of Thermal Expansion: Not more than  $4.5 \times 10^{-5}$  inches/inch x deg F.
  - 4. Water Absorption: Not more than 1 percent, according to ASTM D 570.
  - 5. Flame-Spread Index: 75 or less, according to ASTM E 84.
- B. Cellular PVC Trim Boards:
  - 1. Acceptable manufacturers include:
    - a. AZEK "traditional" trim
    - b. Certainteed "Restoration Millwork" Trim Boards

- c. Approved Equal
2. Finish / color: Smooth / White
3. Sizes: to match existing trim boards that are being replaced; field verify sizes prior to bidding

## 2.2 MISCELLANEOUS MATERIALS

- A. Adhesive for Cellular PVC Trim: Product recommended by trim manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

### 3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
  1. Do not use manufactured units with defective surfaces, sizes, or patterns.
- B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
  1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
  2. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
  3. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.
  4. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

### 3.4 STANDING AND RUNNING TRIM INSTALLATION

- A. Install cellular PVC trim to comply with manufacturer's written instructions.
- B. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary.
  - 1. Use scarf joints for end-to-end joints.
  - 2. Stagger end joints in adjacent and related members.
- C. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints, with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.
- D. Where face fastening is unavoidable, use the Cortex hidden fastening system; countersink fasteners and fill will plug of the same material and color as the trim unless otherwise indicated.

### 3.5 ADJUSTING

- A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

### 3.6 CLEANING

- A. Clean exterior finish carpentry on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

### 3.7 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062013



## SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

## A. Section Includes:

1. Interior architectural woodwork and accessories
2. Interior standing and running trim
3. Shop priming of interior architectural woodwork.
4. Custom architectural cabinetry

## B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing interior architectural woodwork that are concealed within other construction before interior architectural woodwork installation.
2. Section 099123 "Interior Painting" for priming of interior finish carpentry.

## 1.3 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

## 1.4 ACTION SUBMITTALS

## A. Product Data: For each type of product.

1. Wood-Preservative Treatment: Include data and warranty information from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material and manufacturer's written warranty.
2. Fire-Retardant Treatment: Include data and warranty information from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
3. Waterborne Treatments: For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

- B. Shop Drawings: For interior finish carpentry and architectural cabinets.
1. Show extent of interior finish carpentry on plans and elevations using designations from the Drawings, Finish Schedule, and Specifications.
    - a. Show location and layout of each different type of interior finish carpentry item adequately dimensioned and detailed.
    - b. Show details full size.
    - c. Show seams, with specific attention to seams at trim.
    - d. Show grain/pattern with dimensions, grain direction, exposed face, and identification numbers indicating location.
  2. Include dimensioned plans, elevations, sections, details, attachment devices, other components and details of attachments to other work.
  3. Include locations and sizes of furring, blocking, and concealed fasteners, including concealed blocking and reinforcement specified in other Sections.
  4. Include locations and sizes of cutouts and holes for electrical and communication outlets, and other items installed in architectural standing and running trim.
  5. Include details of construction and relationship with adjacent materials.
  6. Show extent of architectural cabinets on plans and elevations using designations from the Drawings, Finish Legend, and Specifications.
    - a. Show details large-scale size.
    - b. Show locations and sizes of furring, and blocking, including concealed blocking and reinforcement specified in other Sections.
  - 7.
- C. Samples for Verification: For the following:
1. Lumber for Transparent and opaque Finish: Not less than 5 inches wide by 12 inches long, for each species and cut, finished on one side and one edge.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Product Certificates: For the following:
1. Composite wood and agrifiber products.
  2. Adhesives.
- C. Quality Standard Compliance Certificates: AWI Quality Certification Program.
- D. Evaluation Reports: For preservative-treated and fire-retardant-treated wood materials, from ICC-ES.

## 1.6 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  - 1. Identify the product, fabrication method or installation method to be modified or replaced.
  - 2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

## 1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Discard lengths of material which are unsound, warped, bowed, twisted, improperly treated, not adequately seasoned or too small to fabricate work with a minimum of joints or optimum jointing arrangements, or which are of objective manufacture with respect to surfaces, sizes, or patterns.
- C. It shall be the sole discretion of the architect to reject proposed seaming.
  - 1. Standing and running trim shall have the least amount of joints possible with the maximum length available.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver interior architectural woodwork until painting and similar finish operations that might damage woodwork have been completed in installation areas. Store woodwork in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

## 1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install interior architectural woodwork until building is enclosed and wet-work is complete.
  - 1. Complying with AWI's "Architectural Woodwork Quality Standards" Section 1700.
- B. Field Measurements: Where interior architectural woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being concealed by construction, and indicate measurements on Shop Drawings.
- C. Established Dimensions: Where interior architectural woodwork is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

## PART 2 - PRODUCTS

### 2.1 INTERIOR ARCHITECTURAL WOODWORK, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
  - 1. The Contract Documents may contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.
- B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's Board of Review. Grade lumber by an agency certified by the American Lumber Standard Committee's Board of Review to inspect and grade lumber under the rules indicated.
  - 1. Factory mark each piece of lumber with grade stamp of grading agency.
  - 2. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.
- C. Softwood Plywood: DOC PS 1.
- D. Hardboard: ANSI A135.4.
- E. MDF: ANSI A208.2, Grade 130.

## 2.2 INTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH

- A. Location: Wood baseboard, wainscot, chair rail, wainscot cap, fin tube cover, window and door frames
- B. Grade: Custom - AWI Quality Standard 300.
- C. Wood Species: Poplar or medium density fiberboard (MDF). Refer to Drawings and Finish Schedule.

## 2.3 INTERIOR FRAMES AND JAMBS FOR OPAQUE FINISH

- A. Grade: Custom - AWI Quality Standard 900.
- B. Wood Species: Poplar

## 2.4 INTERIOR ORNAMENTAL WOODWORK

- A. Description: Toilet Rooms Wainscot constructed of wood salvaged from demolition on this project as noted on the drawings.
- B. Wood Species and Cut: Wood salvaged from board walls on this project that have been dismantled.
- C. Finish: Painted per the drawings.

## 2.5 WOOD COUNTER TOPS

- A. Description: Counter top at bar in Kitchen 102.
- B. Wood Species: 1 ½" thick Antique Elm with eased edges as provided by Elmwood reclaimed Timber ([www.elmwoodreclaimed.com](http://www.elmwoodreclaimed.com) 800-705-0705) To match architect's sample. Details as indicated on Drawings.
- C. Construction: As detailed
- D. Finish: Stained and sealed with waterbased Danish oil.

## 2.6 CUSTOM SLIDING ROOM SEPARATORS (BARN DOORS)

- A. Location: Between Main Hall 101 and Breakout Room 103
- B. Wood Species: ½" thick Antique Elm as provided by Elmwood reclaimed Timber ([www.elmwoodreclaimed.com](http://www.elmwoodreclaimed.com) 800-705-0705) To match architect's sample.
- C. Hardware:
  - 1. Mounting Hardware: Pemko DSG-FT-05BZ kit

- a. Track Length: provide track lengths to accommodate the door widths shown on the drawings.
  2. Door Pulls: Rockwood RM2210-16
    - a. Mounting: Back-to-back
    - b. Finish: US-10BE / 613E – Dark Oxidized Satin Bronze equivalent
    - c. Location: mount one pull on each side of each leaf for a total of four (4) pulls.
- D. Construction: As detailed in drawings.

## 2.7 CUSTOM SLIDING WOOD SLIDING PANELS AT BAR

- A. Location: Between Main Hall 101 and Kitchen 102
- B. Wood Species: ½” thick Antique Elm as provided by Elmwood reclaimed Timber ([www.elmwoodreclaimed.com](http://www.elmwoodreclaimed.com) 800-705-0705 To match architect’s sample.
- C. Hardware:
  1. Mounting Hardware: Pemko H300S-OH/10
  2. Door Pulls: Rockwood RM4800-12
    - a. Mounting: Exposed fastener on Kitchen 102 side
    - b. Finish: US-10BE / 613E – Dark Oxidized Satin Bronze equivalent
    - c. Location: mount one pull on Kitchen 102 side of each leaf for a total of two (2) pulls.
  3. Jam Bolt Lock:
    - a. Deltana Pocket Door Jamb Bolt; Brushed Oil-Rubbed Bronze finish
    - b. Hafele Pocket Door Jamb Bolt Lock; US10B Oil-Rubbed Bronze finish
    - c. Approved Equal
- D. Construction: As detailed in drawings.

## 2.8 WOOD CABINETS FOR OPAQUE FINISH

- A. Architectural Woodwork Standards Grade: Custom, AWI Standards / Section 10 – Casework.
- B. Type of Construction: Frameless.
- C. Species for Exposed Lumber Surfaces: Any closed-grain hardwood.
- D. Panel Product for Exposed Surfaces: MDF
- E. Base and End Panels:
  1. Moisture Resistant Medium Density Fiberboard: Grade 130.
    - a. Base cabinet shims separating the base panels or end panels from the floor will not be an acceptable construction assembly alternative replacing the requirement to use moisture resistant MDF.
- F. Shelves: ¾” paint grade hardwood.
- G. Shelf Rests: BHMA A156.9, B04013; metal.

1. Basis-of-Design Product: Richelieu BP2291180 (nickel).

## 2.9 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of interior architectural woodwork and quality grade specified unless otherwise indicated.
  1. Do not use plain-sawn softwood lumber with exposed, flat surfaces more than 3 inches wide.
  2. Wood Moisture Content: 4 to 9 percent.

## 2.10 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Nailers: Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
  1. Preservative Treatment: Provide softwood lumber treated by pressure process, AWPA U1; Use Category UC3b.
    - a. Provide where in contact with concrete or masonry.
    - b. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
    - c. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
    - d. Mark lumber with treatment quality mark of an inspection agency approved by the American Lumber Standards Committee's (ALSC) Board of Review.
  2. Fire-Retardant Treatment: Complying with requirements; provide where indicated and required by Building Code.
- B. Provide self-drilling screws for metal-framing supports, as recommended by metal-framing manufacturer.
- C. 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.
- D. Adhesives: Do not use adhesives that contain urea formaldehyde.
- E. Installation Adhesive: Product recommended by fabricator for each substrate for secure anchorage.
  1. Adhesives shall have a VOC content of 70 g/L or less.

## 2.11 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Fabricate interior architectural woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Edges of Solid-Wood (Lumber) Members: 1/16 inch unless otherwise indicated.
  2. Edges of Rails and Similar Members More Than 3/4 Inch Thick: 1/8 inch.
- C. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.
1. Notify Architect seven days in advance of the dates and times interior architectural 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 parts fit as intended and check measurements of assemblies against field measurements indicated on approved Shop Drawings before disassembling for shipment.

## 2.12 SHOP PRIMING

- A. Interior Architectural Woodwork for Opaque Finish: Shop prime with one coat of wood primer as specified in Section 099123 "Interior Painting."

## 2.13 SHOP FINISHING

- A. General: Finish interior architectural woodwork with transparent finish at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.
- B. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing interior architectural woodwork, as applicable to each unit of work.
1. Back-priming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of interior architectural woodwork. Apply two coats to end-grain surfaces.
- C. Transparent Finish: provide for Bar-top only
1. Grade: Custom – Comply with AWI Section 1500.
  2. Wash Coat for Closed-Grain Woods: Apply wash-coat Danish oil sealer to woodwork made from closed-grain wood before staining and finishing as recommended by manufacturer for food use counter.
  3. Sheen: Semigloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Before installation, condition interior architectural woodwork to average prevailing humidity conditions in installation areas.



- B. Before installing interior architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

### 3.2 INSTALLATION

- A. Grade: Install interior architectural woodwork to comply with same grade as item to be installed.
  - 1. Quality Standard: Install interior architectural woodwork to comply with AWI Section 1700.
- B. Assemble interior architectural woodwork and complete fabrication at Project site to the extent that it was not completed in the shop.
- C. Install interior architectural woodwork level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut interior architectural woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Preservative-Treated Wood: Where cut or drilled in field, treat cut ends and drilled holes according to AWWPA M4.
- F. Anchor interior architectural woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with interior architectural woodwork.
  - 1. For shop-finished items, use filler matching finish of items being installed.
- G. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 96 inches long except where shorter single-length pieces are necessary.
  - 1. Scarf running joints and stagger in adjacent and related members.
  - 2. Fill gaps, if any, between top of base and wall with latex sealant, painted to match wall.
  - 3. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches.
- H. Touch up finishing work specified in this Section after installation of interior architectural woodwork. Fill nail holes with matching filler where exposed.
  - 1. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats are shop applied.
- I. See Section 099123 "Interior Painting" for final finishing of installed interior architectural woodwork not indicated to be shop finished.
- J. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing.

- K. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.

### 3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective interior architectural woodwork, where possible, to eliminate functional and visual defects. Where not possible to repair, replace interior architectural woodwork. Adjust joinery for uniform appearance.
- B. Clean interior architectural woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064023

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Retain or delete this article in all Sections of Project Manual.
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Silicone joint sealants.
  - 2. Mildew-resistant joint sealants.
  - 3. Latex joint sealants.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.
  - 4. Joint-sealant color.
- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For special warranties.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

## 1.6 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  - 2. When joint substrates are wet.
  - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## 1.7 WARRANTY

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

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. **Compatibility:** Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. **Colors of Exposed Joint Sealants:** As selected by Architect from manufacturer's full range.

## 2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Use NT.
1. Basis-of-Design Product: Product(s) indicated on Drawings, Specifications, and Exterior Materials and Finish Legends to establish the quality level, performance characteristics, and design requirements for the Project:
    - a. Dow Corning Corporation; 791.
    - b. GE Construction Sealants; SCS2000 SilPruf.
    - c. Pecora Corporation; PCS.
    - d. Sika Corporation U.S.; Sikasil WS-295 or Sikasil WS-295 FPS.

## 2.3 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
- B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
1. Basis-of-Design Product: Product(s) indicated on Drawings, Specifications, and Exterior Materials and Finish Legends to establish the quality level, performance characteristics, and design requirements for the Project:
    - a. Dow Corning Corporation; 786-M White.
    - b. GE Construction Sealants; SCS1700 Sanitary.
    - c. Tremco Incorporated; Tremsil 200.

## 2.4 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
1. Basis-of-Design Product: Product(s) indicated on Drawings, Specifications, and Exterior Materials and Finish Legends to establish the quality level, performance characteristics, and design requirements for the Project:
    - a. BASF Construction Chemicals, LLC, Building Systems; Sonolac.
    - b. May National Associates, Inc., a subsidiary of Sika Corporation U.S.; Bondaflex 600 or Bondaflex Sil-A 700.
    - c. Pecora Corporation; AC-20.
    - d. Tremco Incorporated; Tremflex 834.

## 2.5 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
  - 1. Basis-of-Design Product: Product(s) indicated on Drawings, Specifications, and Exterior Materials and Finish Legends to establish the quality level, performance characteristics, and design requirements for the Project:
    - a. BASF Construction Chemicals, LLC, Building Systems.
    - b. Construction Foam Products, a division of Nomaco, Inc.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material) or Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint.
  - 1. Provide self-adhesive tape where applicable.

## 2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. **Surface Cleaning of Joints:** Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
    - a. Nonporous joint substrates include the following:
      - 1) Metal
      - 2) Glass
      - 3) Porcelain enamel
- B. **Joint Priming:** Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
1. Apply primer to comply with joint-sealant manufacturer's written instructions.
  2. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. **Masking Tape:** Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears.
1. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. **General:** Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. **Sealant Installation Standard:** Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. **Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.**
1. Do not leave gaps between ends of sealant backings.
  2. Do not stretch, twist, puncture, or tear sealant backings.
  3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. **Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.**

- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
  
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.
  - 4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C 1193.
  - 5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C 1193.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

### 3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion.
  - 1. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.6 JOINT-SEALANT SCHEDULE

- A. Joint Sealant Types and Application: The preferred joint sealant types and applications for the project are as follows:
  - 1. Exterior Vertical Building Joints: Single-component neutral-curing silicone.



2. Interior Joints at Wet Areas: Mildew resistant silicone.
  3. Interior Sealant: Acrylic latex.
- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Construction joints in cast-in-place concrete.
    - b. Expansion joints between cast-in-place concrete and existing construction.
    - c. Exterior and interior perimeter joints between metal frames and air-vapor barrier membrane in exterior wall construction.
    - d. Other joints as indicated on Drawings.
  2. Joint Sealant: Silicone, nonstaining, S, NS, 50, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
1. Joint Locations:
    - a. Control joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints between interior wall surfaces and frames of interior doors, and windows.
    - c. Interior joints in field painted vertical and overhead surfaces.
    - d. Joints where perimeter of countertops abut walls, backsplash and other vertical surfaces.
    - e. Joints in gypsum drywall assemblies.
    - f. Other joints as indicated on Drawings.
  2. Joint Sealant: Acrylic latex.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
    - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
  2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Concealed mastics.
1. Joint Locations:
    - a. Aluminum thresholds.
    - b. Sill plates.
    - c. Other joints as indicated on Drawings.
  2. Joint Sealant: Butyl-rubber based
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

## SECTION 081433 - STILE AND RAIL WOOD DOORS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:

- 1. Exterior stile and rail wood doors.
- 2. Interior stile and rail wood doors.
- 3. Interior Screen Door

- B. Related Requirements:

- 1. Section 099113 "Exterior Painting" and Section 099123 "Interior Painting" for field finishing stile and rail doors.

#### 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 the following:

- 1. Details of construction.
- 2. Door frame construction.
- 3. Factory-machining criteria.
- 4. Factory-priming specifications.

- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data, including those for stiles, rails, panels, and moldings (sticking); and other pertinent data, including the following:

- 1. Door schedule indicating door and frame location, type, size and swing.
- 2. Door elevations, dimensions and location of hardware, lite locations, and glazing thickness.
- 3. Details of frame for each frame type, including dimensions and profile.
- 4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
- 5. Dimensions and locations of mortises and holes for hardware.

6. Clearances and undercuts.
7. Requirements for veneer matching.
8. Doors to be factory primed and application requirements.
9. Apply WI Certified Compliance Program label to Shop Drawings.

C. Samples for Verification:

1. Corner sections of doors, approximately 8 by 10 inches, with door faces and edges representing actual materials to be used.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality control reports.
- B. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS.

- A. Special warranties.
- B. Quality Standard Compliance Certificates: WI Certified Compliance Program certificates.

1.7 QUALITY ASSURANCE

- A. Manufacturer's Certification: Licensed participant in WI's Certified Compliance Program.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in opaque plastic bags or cardboard cartons.
- C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, and wet work in spaces is complete and dry.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors and frames that fail in materials or workmanship within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Delamination of veneer.

- b. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
  - c. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
  3. Warranty shall be in effect during specified period of time from date of Substantial Completion.
  4. Warranty Period for Exterior Doors: Five years.
  5. Warranty Period for Interior Doors: Life of installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of stile and rail wood door from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Exterior Door Thermal Transmittance: Provide doors fabricated with thermal-resistance value (R-value) of not less than 3.3 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.

### 2.3 MATERIALS

- A. Use only materials that comply with referenced standards and other requirements specified.
  1. Assemble exterior doors, including components, with wet-use adhesives complying with ASTM D5572 for finger joints and with ASTM D5751 for joints other than finger joints.
  2. Assemble interior doors, including components, with either dry-use or wet-use adhesives complying with ASTM D5572 for finger joints and with ASTM D5751 for joints other than finger joints.
- B. Panel Products: Any of the following unless otherwise indicated:
  1. Particleboard: ANSI A208.1, Grade M-2.
  2. Medium-density fiberboard (MDF,) complying with ANSI A208.2, Grade 130.
  3. Hardboard complying with ANSI A135.4.
  4. Veneer-core plywood.

### 2.4 EXTERIOR STILE AND RAIL WOOD DOORS

- A. Exterior Stile and Rail Wood Doors: Exterior custom doors complying with the AWI, AWMAC, and WI's Architectural Woodwork Standards, and with other requirements specified. Manufacturer's that may be incorporated into the work include:
  1. Eggers Industries Stile and Rail Doors
  2. Jeld-Wen Custom Wood All-Panel Exterior Doors
  3. Approved Equal

## B. Door Properties:

1. Performance Grade: WDMA I.S. 6A Heavy Duty.
2. Architectural Woodwork Standards Grade: Custom
3. Panel Designs: As indicated on Drawings.
4. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
5. Finish: Opaque.
6. Door Construction for Opaque Finish:
  - a. Stile and Rail Construction: Veneered, structural composite lumber.
  - b. Raised-Panel Construction: Veneered, wood-based panel product.
7. Stile and Rail Widths: To match panel size of adjacent exterior stile and rail door.
8. Raised-Panel Thickness: Manufacturer's standard, but not less than 1-3/8 inches.
9. Molding Profile (Sticking): to match profile on adjacent exterior stile and rail door.
10. Mark, label, or otherwise identify stile and rail wood doors as complying with WDMA I.S. 6A and grade specified.

## 2.5 INTERIOR STILE AND RAIL WOOD DOORS

## A. Interior Stile and Rail Wood Doors: Interior doors complying with AWI, AWMAC, and WI's Architectural Woodwork Standards and with other requirements specified.

1. Interior doors to be by the same manufacturer as the exterior doors
2. Performance Grade: WDMA I.S. 6A Standard Duty.
3. Architectural Woodwork Standards Grade: Custom.
4. Panel Designs: Indicated on Drawings. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
5. Finish: Opaque
6. Door Construction for Opaque Finish:
  - a. Stile and Rail Construction: Clear softwood; may be edge glued for width and finger jointed.
  - b. Raised-Panel Construction: Clear softwood lumber; edge glued for width.
  - c. Flat-Panel Construction: wood-based panel product
7. Stile and Rail Widths: As indicated
8. Raised-Panel Thickness: Manufacturer's standard, but not less than 1-3/8 inches
9. Flat-Panel Thickness: 1/2 inch
10. Molding Profile (Sticking): To match exterior doors
11. Mark, label, or otherwise identify stile and rail wood doors as complying with WDMA I.S. 6A and grade specified.

## 2.6 STILE AND RAIL WOOD DOOR FABRICATION

## A. Factory fit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels unless otherwise indicated:

1. Clearances:
  - a. Provide 1/8 inch at heads, jambs, and between pairs of doors.

- b. Provide 1/2 inch from bottom of door to top of decorative floor finish or covering.
    - c. Where threshold is shown on Drawings or scheduled, provide not more than 3/8 inch from bottom of door to top of threshold.
  2. Bevel doors 1/8 inch in 2 inches at lock and hinge edges.
- B. Fabricate stile and rail wood doors in sizes indicated for field fitting.
- C. Factory machine doors for hardware that is not surface applied.
  1. Locate hardware to comply with DHI-WDHS-3.
  2. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.
- D. Exterior Doors: Factory treat exterior doors with water-repellent preservative after fabrication has been completed but before shop priming.
  1. Comply with WDMA I.S. 4.
  2. Flash top of out-swinging doors with manufacturer's standard metal flashing.

## 2.7 INTERIOR SCREEN DOORS

- A. Interior Screen Doors: Basis of Design product is "Hampton" style by Wooden Screen Door Company, Waldoboro, Maine. Provide basis-of-design product or an approved equal.
- B. Door Properties:
  1. Wood Frame Material: Solid Mahogany
  2. Door Thickness: 1-1/16" minimum
  3. Wood Joinery: mortise and tenon, glued and pegged
  4. Wood Finish: factory primed white, field finish to match other interior door finishes
  5. Screen: Charcoal Aluminum screening with minimum 18-by-14 mesh size
  6. Screen Frame: Brown Anodized Aluminum
  7. Hardware by Door Manufacturer: Manufacturer's standard heavy duty pneumatic door closer; color to match screen frame.

## 2.8 FACTORY PRIMING

- A. Doors for Opaque Finish: Shop prime faces, all four edges, edges of cutouts, and mortises with one coat of wood primer specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
  1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
  2. Reject doors with defects.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Hardware: For installation, see Section 087111 "Door Hardware (Descriptive Specification)"
- B. Install doors and frames to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Job-Fitted Doors:
  - 1. Align and fit doors in frames with uniform clearances and bevels as indicated below.
    - a. Do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors.
  - 2. Machine doors for hardware.
  - 3. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
  - 4. Clearances:
    - a. Provide 1/8 inch at heads, jambs, and between pairs of doors.
    - b. Provide 1/2 inch from bottom of door to top of decorative floor finish or covering.
    - c. Where threshold is shown on Drawings or scheduled, provide not more than 3/8 inch from bottom of door to top of threshold.
  - 5. Bevel doors 1/8 inch in 2 inches at lock and hinge edges.

### 3.3 FIELD QUALITY CONTROL

- A. Inspection Agency: Owner may engage a qualified inspector to perform inspections and to furnish reports to Architect.
- B. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- C. Reinspect repaired or replaced installations to determine if replaced or repaired door installations comply with specified requirements.

### 3.4 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.

END OF SECTION 081433



## SECTION 085200 – EXTERIOR WINDOWS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes:
  - 1. Exterior wood windows

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
  - 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
  - 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Samples for Verification: For wood windows, doors and components required, prepared on Samples of size indicated below:
  - 1. Exposed Finishes: 2 by 4 inches.
  - 2. Exposed Hardware: Full-size units.
- D. Product Schedule: Use same designations indicated on Drawings.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each type of wood window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.

## 1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection, water leakage, and air infiltration.
    - c. Faulty operation of movable sash and hardware.
    - d. Deterioration of materials and finishes beyond normal weathering.
    - e. Failure of insulating glass.
  - 2. Warranty Period:
    - a. Windows: 10 years from date of Substantial Completion.
    - b. Glazing Units: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain wood windows from single source from single manufacturer.

### 2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
  - 1. Window Certification: WDMA certified with label attached to each window.

- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 as follows:
  - 1. Minimum Performance Class: AW.
  - 2. Minimum Performance Grade: 40.
- C. Thermal Transmittance: NFRC 100 maximum whole-window U-factor of 0.30 Btu/sq. ft. x h x deg F
- D. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.40.
- E. Sound Transmission Class (STC): Rated for not less than 30 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- F. Outside-Inside Transmission Class (OITC): Rated for not less than 26 OITC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 1332.

## 2.3 WOOD WINDOWS

- A. Wood Windows:
  - 1. Basis-of-Design Product: Andersen 200 Series Double-Hung Window to match existing
  - 2. Manufacturers: Subject to compliance with requirements, provide the Basis of Design product or equivalent products by one of the following:
    - a. Loewen Windows
    - b. JELD-WEN Custom Wood series
    - c. Pella Architect Reserve Series
- B. Operating Types: Provide the following operating types in locations indicated on Drawings:
  - 1. Double hung.
- C. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than 1/32 inch deep by 2 inches wide; water-repellent preservative treated.
  - 1. Exterior Finish: Manufacturer's standard factory-prime coat wood.
  - 2. Interior Finish: Manufacturer's standard factory-prime coat.
- D. Glass: Clear annealed glass, ASTM C 1036, Type 1, Class 1, q3.
  - 1. Kind: Fully tempered unless otherwise noted.
- E. Insulating-Glass Units: ASTM E 2190.
  - 1. Glass: ASTM C 1036, Type 1, Class 1, q3.
    - a. Tint: Clear.
    - b. Kind: Fully tempered unless noted otherwise
  - 2. Lites: Two
  - 3. Filling: Fill space between glass lites with argon.
  - 4. Low-E Coating: Pyrolytic on second surface.
  - 5. U-Factor 0.30 or better
  - 6. Solar Heat Gain Coefficient 0.29

- F. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.
- G. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
  - 1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.
- H. Hung Window Hardware:
  - 1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
  - 2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only. Provide limit device to limit clear opening to 4 inches maximum for all operable windows on the second floor.
  - 3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.

## 2.4 ACCESSORIES

- A. Dividers (False Muntins): Provide divider grilles in designs indicated for each sash lite.
  - 1. Quantity and Type: Three per sash, two permanently located at exterior and interior lites and one permanently located between insulating-glass lites.
  - 2. Material: painted wood surface muntins with a wood or metal internal divider.
  - 3. Pattern: As indicated on drawings.
  - 4. Profile: As selected by Architect from manufacturer's full range.
  - 5. Color: As selected by Architect from manufacturer's full range.

## 2.5 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
  - 1. Type and Location: Full, inside for project-out, Full, outside for double-hung Half, outside for single-hung sashes.
- B. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch-diameter, coated aluminum wire.
  - 1. Wire-Fabric Finish: Charcoal gray.

## 2.6 FABRICATION

- A. Fabricate wood windows in sizes indicated on drawings. Include a complete system for installing and anchoring windows.
- B. Glaze wood windows in the factory.

- C. Weather strip each operable sash to provide weathertight installation.
- D. Mullions: Provide mullions and cover plates, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections. Provide mullions and cover plates capable of withstanding design wind loads of window units.
- E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

#### 3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections.
  - 1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.
  - 1. Keep protective films and coverings in place until final cleaning.
- C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085200

## SECTION 087111 - DOOR HARDWARE

## 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. Mechanical door hardware for the following:
  - a. Swinging doors.
  - b. Sliding doors
- 2. Cylinders for door hardware.

## B. Related Requirements:

- 1. Section 081433 "Stile and Rail Wood Doors" for doors to receive hardware.

## 1.3 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

## 1.4 PREINSTALLATION MEETINGS

## A. Keying Conference: Conduct conference at Project site.

- 1. Conference participants shall include Installer's Architectural Hardware Consultant and Owner's security consultant.
- 2. Incorporate conference decisions into keying schedule after reviewing door hardware keying system including, but not limited to, the following:
  - a. Flow of traffic and degree of security required.
  - b. Preliminary key system schematic diagram.
  - c. Requirements for key control system.
  - d. Requirements for access control.
  - e. Address for delivery of keys.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings – Door and Frame Schedule: Indicate location of door hardware sets for each door opening in a Door and Frame Schedule.
  - 1. Include hand of each door and degree of swing.
  - 2. Include size, exposure, special clearances as needed for each door.
  - 3. Include mounting locations if different from those specified.
  - 4. Include styles and locations of door pulls, bumpers, and similar devices.
  - 5. Include armor, kick and mop plates.
  - 6. Include weather stripping, sound seals, and thresholds.
- C. Shop Drawings: For door hardware.
  - 1. Include dimensioned plans and elevations, large-scale details, attachment devices, and other components.
  - 2. Include special sill, head, joint, or meeting stile conditions affecting type, size, installation, or clearance of door hardware units.
  - 3. Include special trim design requirements that are better indicated graphically, such as lever and knob designs.
  - 4. Include details of weather stripping, sound seals, and thresholds.
  - 5. Include locations of blocking in walls to support wall stops.
- D. Samples: For each exposed product in each finish specified, in manufacturer's standard size.
  - 1. Tag Samples with full product description to coordinate Samples with door hardware schedule.
- E. Samples for Verification: For each type of exposed product, in each finish specified.
  - 1. Sample Size: Full-size units or minimum 2-by-4-inch samples for sheet and 4-inch long samples for other products.
    - a. Full-size Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
  - 2. Tag Samples with full product description to coordinate Samples with door hardware schedule.
- F. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.



1. Submittal Sequence: Submit door hardware schedule, door and frame submittals concurrently to allow a coordinated shop drawing review. If any of these submittals are submitted without the others it will be held and not reviewed until all three submittals have been received by the design team.
  2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
  3. Content: Include the following information:
    - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
    - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
    - c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
    - d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
    - e. Fastenings and other installation information.
    - f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
    - g. Mounting locations for door hardware.
    - h. List of related door devices specified in other Sections for each door and frame.
- G. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and Architectural Hardware Consultant.
- B. Product Certificates: For each type of electrified door hardware.
  1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.
- C. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.
- B. Schedules: Final door hardware and keying schedule.

### 1.8 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  - 1. Identify the product, fabrication method or installation method to be modified or replaced.
  - 2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

### 1.9 COORDINATION

- A. Security: Coordinate installation of door hardware and keying with Owner.

### 1.10 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
  - 1. Warehousing Facilities: In Project's vicinity.
  - 2. Scheduling Responsibility: Preparation of door hardware and keying schedule.
- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC) and an Electrified Hardware Consultant (EHC).

### 1.11 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

### 1.12 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including excessive deflection, cracking, or breakage.
    - b. Faulty operation of doors and door hardware.
    - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
  - 2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
    - a. Manual Closers: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each door hardware type is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  - 1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.
    - b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
    - c. Indicate deviations, if any, from the Work specified.

2. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

D. Door hardware metal finishes are as follows, typical:

1. Exterior Doors, exterior Lever: US-32D, BHMA 630 Stainless Steel
2. Exterior Doors, interior Lever: US-15, BHMA/ANSI 619 Satin Nickel
3. Interior Doors: US-15, BHMA/ANSI 619 Satin Nickel

## 2.2 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

## 2.3 PERFORMANCE REQUIREMENTS

A. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design," and ICC A117.1.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf .
2. Comply with the following maximum opening-force requirements:
  - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
  - b. Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.
5. Adjust spring hinges so that, from an open position of 70 degrees, the door will take at least 1.5 seconds to move to the closed position.

## 2.4 SCHEDULED DOOR HARDWARE

A. Provide products for each door that comply with requirements indicated in Part 2 of the Specifications and the following:

1. Door Hardware Scheduled in Part 3 of the Specification.
2. "Door and Frame Schedule" indicated on Drawings.
3. "Door Hardware Sets" indicated on Drawings.

B. Coordinate specific door hardware required for each door location with the "Door and Frame Schedule" and "Door Hardware Sets."

1. Provide design, grade, function, operation, quantity, size, finish and other distinctive qualities for each type of door hardware required at each door location.
  2. Provide door hardware for each opening with functions required to ensure proper door operation.
- C. Sequence of Operation: Provide electrified door hardware function, sequence of operation, access control and interface with other building control systems indicated.

## 2.5 HINGES, GENERAL

- A. Quantity: Provide the following, unless otherwise indicated:
1. Three Hinges: For doors with heights 61 to 90 inches
- B. Hinge Weight: Unless otherwise indicated, provide the following:
1. Entrance Doors: Heavy-weight hinges (Grade 1)
  2. Doors with Closers: Antifriction-bearing hinges (Grade 2)
  3. Non-Acoustic Interior Doors: Standard-weight hinges.
- C. Hinge Properties: Unless otherwise indicated, provide the following:
1. Mounting: Full mortise (butts).
  2. Anti-friction Bearing Hinges: Manufacturer's standard anti-friction bearing.
  3. Pins: Non-rising loose unless otherwise indicated
    - a. Exterior Hinges: Stainless steel, with stainless-steel pin.
    - b. Interior Hinges: Steel, with steel pin.
  4. Tips: Flat button.
  5. Corners: Square.

## 2.6 HINGES

- A. Basis of Design: Campus standard product by Stanley Commercial hardware; a Division of The Stanley Works:
1. Heavy Weight Hinges: Stanley FBB 5 x 4.5
  2. Standard Weight Hinges: Stanley FBB 4.5 x 4.5
  3. Hinges for Screen Door: Stanley FBB 4 x 4

## 2.7 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in door hardware schedule.
- B. Lock Throw: Minimum 1/2-inch latchbolt throw.
- C. Lock Backset: 2-3/4 inches unless otherwise indicated.
- D. Bored Locks: BHMA A156.2; Grade 1; Series 4000.
1. Basis of Design: Provide Campus standard Product: Schlage ND-Series
    - a. Lever Style: Sparta

- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
  - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
  - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.

## 2.8 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
  - 1. Basis of Design: Provide Campus standard Product:
    - a. Schlage Lock – Everest Series.
- B. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

## 2.9 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.
  - 1. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.
    - a. Provide three cylinder change keys and five each of master and grand master keys.
- B. Keys: Nickel silver or brass.

## 2.10 MECHANICAL STOPS AND HOLDERS

- A. Wall-Mounted Stops:
  - 1. Basis-of-Design Product:
    - a. Wall Mounted Stop: Rockwood RM860, Satin Stainless (US-15/619)
  - 2. Manufacturers: Provide Basis of design product or equivalent by one of the following:
    - a. IVES Hardware; an Ingersoll-Rand company.
    - b. Stanley Commercial Hardware; Div. of The Stanley Works.

## 2.11 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm.
- B. Basis of Design Product: Provide Campus Standard Product LCN 4040XP

- C. Closer Properties:
  - 1. Mounting Location: Hinge side at all locations
  - 2. Finish: Aluminum
  - 3. Cover Material: Plastic
  - 4. Overhead Stop Function: CUSH function
  - 5. Provide installation accessories as required by the condition or as recommended by the manufacturer.
  
- D. Comply with manufacturer's written instructions for size of door closers depending on size of the door.

## 2.12 OVERHEAD STOPS AND HOLDERS

- A. Overhead Stops and Holders: BHMA A156.8.
  - 1. Basis-of-Design Product:
    - a. Rixson 9 Series
  - 2. Manufacturers: Provide basis of design product or equivalent product by one of the following:
    - a. Glynn-Johnson; An Ingersoll-Rand Company.
    - b. Rockwood Manufacturing Company.
    - c. SARGENT Manufacturing Company; an ASSA ABLOY Group company

## 2.13 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hager Companies.
    - b. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
    - c. Reese Enterprises, Inc.
  - 2. Type and Function: Selection of door gasketing types required for the Project will be determined by door schedule, door function, door operation, compatibility with other door hardware and accessibility regulations.
  - 3. Door Gasketing, General: Provide continuous weather-strip gasketing on exterior doors. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
    - a. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

## 2.14 THRESHOLDS

- A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Hager Companies.
    - b. Pemko Manufacturing Co.; an ASSA ABLOY Group company.

- c. Reese Enterprises, Inc.
- d. Rixson Specialty Door Controls; an ASSA ABLOY Group company.

B. Saddle Thresholds:

- 1. Type(s): Thermal break and fluted top, barrier free
- 2. Base Metal: Aluminum or stainless steel.

2.15 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Hager Companies.
  - b. Rockwood Manufacturing Company.
  - c. Stanley Commercial Hardware; Div. of The Stanley Works.

B. Silencers for Wood Door Frames: Grade 1; neoprene or rubber; minimum 5/8 by 3/4 inch; fabricated for drilled-in application to frame.

2.16 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

- 1. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

- 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
- 2. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
- 3. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.



## 2.17 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- B. Wood Doors: Comply with door and hardware manufacturers' written instructions.

## 3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware to comply with governing regulations.
  - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  - 2. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
  - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Owner.

D. Key Control System:

1. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
2. Key Control System Software: Set up multiple-index system based on final keying schedule.

E. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

F. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

### 3.4 ADJUSTING

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

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

### 3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

### 3.6 MAINTENANCE SERVICE

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

- B. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

### 3.7 DEMONSTRATION

- A. Engage Installer to train Owner's maintenance personnel to adjust, operate, and maintain door hardware.

### 3.8 DOOR HARDWARE SCHEDULE

- A. Provide door hardware products for each door that comply with requirements indicated in Part 2 of the Specifications and the following:
1. Door Hardware scheduled in Part 3 of the Specification.
  2. "Door and Frame Schedule" indicated on Drawings.
  3. "Door Hardware Sets" indicated on Drawings.

#### **Hardware Group 1 – Doors 106 & 107**

- 1 EA Privacy/Bathroom lockset – Schlage ND40S  
3 EA SW BB Hinge – Stanley FBB 4.5 x 4.5  
1 EA Wall Stop  
Silencers

#### **Hardware Group 2 – Door 105A**

- 1 EA Storeroom lockset with tactile surface - Schlage ND40S-8SP  
1 EA Overhead Stop  
3 EA SW BB Hinge – Stanley FBB 4.5 x 4.5  
Silencers

#### **Hardware Group 3 – Exterior Door 103**

- 1 EA Storeroom lockset - Schlage ND25D  
3 EA HW BB Hinge – Stanley FBB 5 x 4.5  
1 EA Closer with overhead stop – LCN 4040XP CUSH  
Weather Gasketing

#### **Hardware Group 4 – Door 104**

- 1 EA Classroom Set - Schlage ND70PD  
3 EA SW BB Hinge – Stanley FBB 4.5 x 4.5  
1 EA Wall Stop  
Silencers

#### **Hardware Group 5 – Door 101**

- 1 EA Passage Set - Schlage ND10S  
1 EA Closer with overhead stop – LCN 4040XP CUSH

- 3 EA SW BB Hinge – Stanley FBB 4.5 x 4.5
- 1 EA Wall Stop  
Silencers

**Hardware Group 6 – Door 102**

- 1 EA Classroom Set - Schlage ND70PD
- 1 EA Closer with overhead stop – LCN 4040XP CUSH
- 3 EA SW BB Hinge – Stanley FBB 4.5 x 4.5  
Silencers

**Hardware Group 7 – Screen Door 100**

- 1 EA Standard Door Pull
- 1 EA Pneumatic Closer (by door supplier)
- 3 EA SW BB Hinge – Stanley FBB 4 x 4  
Silencers

END OF SECTION 087111

## SECTION 092900 - GYPSUM BOARD

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Interior gypsum board assemblies at walls.
  - 2. Acoustic sound insulation within gypsum board assemblies.
- B. Related Requirements:
  - 1. Section 061053 "Miscellaneous Rough Carpentry" for wood blocking installed in gypsum board assemblies.

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For the following products:
  - 1. Trim Accessories: Full-size Sample in 12-inch-long length for each trim accessory indicated.
- C. Shop Drawings: For gypsum board assemblies.
  - 1. Show location of each gypsum board wall assembly system on plans and elevations.
    - a. Show locations for each type of panel specified.
    - b. Show locations requiring sound attenuation blankets or other acoustical treatment.
  - 2. Show locations, fabrication, and installation of control joints, reveals, and trim; include plans, elevations, sections, details of components, and attachments to other work.
  - 3. Include dimensions and profiles of aluminum trim accessories
  - 4. Include details showing where partitions pass through ceilings to structure above.
    - a. Indicate extent of gypsum panel application and the levels of gypsum board finish.
    - b. Include provisions for fitting gypsum panels around structural members projecting below the underside of floor/roof slabs.
  - 5. If deviations are proposed indicate where and how the proposed system deviates from Contract Documents.

#### 1.4 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  - 1. Identify the product, fabrication method or installation method to be modified or replaced.
  - 2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect and Owner, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

#### 1.5 QUALITY ASSURANCE

#### 1.6 MEP COORDINATION

- A. Coordinate construction detailing, installation, and locations of stud partition framing with adjacent structural and mechanical systems and related Work indicated on architectural, mechanical, plumbing, and electrical drawings to ensure that interior wall assemblies incorporate the Work indicated and do not conflict with locations of wall mounted mechanical, plumbing, electrical and low voltage devices. Coordinate to ensure that gypsum board assembly installation provide clearances, cutouts, and penetrations that incorporates the MEP Work.

#### 1.7 EQUIPMENT, DEVICE, AND FIXTURE SUPPORT COORDINATION

- A. Coordinate construction detailing, installation, and locations of stud partition framing with related Work indicated on drawings to ensure that interior wall assemblies incorporate blocking and equipment support systems required for wall mounted equipment, railings and grab bars, millwork and casework, plumbing fixtures, and other wall supported systems. Coordinate to ensure that gypsum board assembly installation provide clearances, cutouts, and penetrations that incorporates the Work.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

## 1.9 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## PART 2 - PRODUCTS

### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each gypsum board type and assembly is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  - 1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.
    - b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
    - c. Indicate deviations, if any, from the Work specified.
- D. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Quality Standard: Unless otherwise indicated, comply with the following "Gypsum Association" and "USG Product Folders" for the construction, finishes, installation, and other requirements for non-structural metal framing systems.

### Gypsum Association

1. GA-214-10 Recommended Levels of Gypsum Board Finish.
2. GA-216-13 Application and Finishing of Gypsum Panel Products.
3. ICC ESR-1338 Gypsum Wall and Ceiling Assemblies.

### USG Corporation

4. SA-130 Application Guide.
5. AC-3152 Drywall Suspension System Brochure.

## 2.3 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

## 2.4 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Georgia-Pacific Gypsum LLC.
  2. National Gypsum Company.
  3. USG Corporation.
- B. Mold-Resistant Interior Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Georgia-Pacific Gypsum LLC, Subsidiary of Georgia Pacific; ToughRock Fireguard X Mold-Guard Gypsum Board.
    - b. National Gypsum Company; Gold Bond XP Fire-Shield Gypsum Board.
    - c. USG Corporation; Sheetrock Brand Mold Tough.
  2. Core: 5/8 inch, Type X.
  3. Long Edges: Tapered.
  4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

## 2.5 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Structus Building Technologies, No-Coat-Ultratrim.
    - b. Vinyl Corp, Drywall & Veneer Accessories.



c. Clark Dietrich, Vinyl Beads

2. Material: Co-polymer core or rigid vinyl.
3. Shapes: as required, including, but not limited to:
  - a. LC-Bead: J-shaped; exposed long flange receives joint compound.

## 2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
  1. Interior Gypsum Board: 10-by-10 glass mesh.
- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
  1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
  2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
  3. Fill Coat: For second coat, use setting-type, sandable topping compound.
  4. Finish Coat: For third coat, use drying-type, all-purpose compound.
  5. Skim Coat: For final coat of Level 5 finish, use high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

## 2.7 SOUND ATTENUATION INSULATION

- A. General: Sound-attenuation blankets without membrane facing produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
- B. Mineral-Wool Blanket, Unfaced: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Sound Attenuation Insulation for Interior Partitions:
      - 1) Johns Manville; MinWool SAFB Insulation.
      - 2) Owens Corning; Thermafiber SAFB Insulation.
      - 3) Rockwool; SAFE'n'SOUND Insulation
  2. NRC Rating: 1.10 minimum for 3 1/2 inch thickness.

## 2.8 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.
  - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
  - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Pecora Corporation; AC-20 FTR or AIS-919.
    - b. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
    - c. USG Corporation; SHEETROCK Acoustical Sealant.
  - 2. Acoustical joint sealant shall have a VOC content of 250 g/L or less.
  - 3. Acoustical joint sealant shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- D. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
  - 2. Fit gypsum panels around ducts, pipes, and conduits.
  - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch-wide joints to install sealant.
- F. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- G. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

### 3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
  - 1. Mold Resistant Interior Type X: All vertical and horizontal surfaces, typical.
- B. Single-Layer Application:
  - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
  - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
    - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
  - 3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

### 3.4 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Interior Trim: Install interior trim where indicated or required and according to the USG – “Gypsum Construction Handbook”.
  - 1. LC-Bead: Use at exposed panel edges.

### 3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
  - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - 2. Level 2: not used on this project
  - 3. Level 3: not used on this project
  - 4. Level 4: Typical project finish - for all panel surfaces to be exposed to view
  - 5. Level 5: Not used on this project

### 3.6 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

## SECTION 096519 - RESILIENT TILE FLOORING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Luxury vinyl floor tile (LVT)
  - 2. Resilient Accessory between existing wood flooring and LVT

## 1.3 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.
  - 1. Review methods and procedures related to resilient tile flooring installation including, but not limited to, the following:
    - a. Review delivery, storage, and handling procedures.
    - b. Review ambient conditions and ventilation procedures.
    - c. Review subfloor preparation procedures.
    - d. Review testing results for alkalinity, adhesion, and moisture content of subfloor.
    - e. Review remedial methods to be undertaken if test results are not acceptable.
    - f. Review patterning layout and design intent.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For resilient tile flooring.
  - 1. Show extent of resilient tile flooring on plans using designations from the Drawings and Finish Schedule.
    - a. Show location and layout of each different type, color, texture, and pattern of resilient tile flooring.
    - b. Show locations of seams, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
  - 2. Show location and extent of resilient accessories.
- C. Samples for Verification: Full-size units of each color and pattern of floor tile required.

- D. Product Schedule: For floor tile use same designations indicated on Drawings and Finish Schedule.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of floor tile to include in maintenance manuals.

#### 1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Floor Tile: Furnish one box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

#### 1.8 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  - 1. Identify the product, fabrication method or installation method to be modified or replaced.
  - 2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

#### 1.9 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated.

1. Engage an installer who employs workers for this Project who are trained or certified by floor tile manufacturer for installation techniques required.
- B. Mockups: Provide loose mock-up of 100 SF area for review by Architect prior to installation.

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Store flooring and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F. Store floor tiles on flat surfaces.

#### 1.11 FIELD CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:
  1. 48 hours before installation.
  2. During installation.
  3. 48 hours after installation.
- B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Close spaces to traffic during floor tile installation.
- D. Close spaces to traffic for 48 hours after floor tile installation.
- E. Install floor tile after other finishing operations, including painting, have been completed.

### PART 2 - PRODUCTS

#### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each resilient tile flooring type and system is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.

- b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
  - c. Indicate deviations, if any, from the Work specified.
- D. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient tile flooring, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
- 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

## 2.3 LUXURY VINYL FLOOR TILE

- A. Manufacturers: Subject to compliance with requirements, provide the basis of design product noted in the finish schedule on sheet A1001, or one of the following products:
- 1. Mannington – Nature’s Path Wood Look
  - 2. Interface – Level Set Collection, Natural Woodgrains
  - 3. Shaw – Array Collection, Insight Plank
- B. Tile Standard: ASTM F 1700.
- 1. Class: Class III, Printed Vinyl Plank.
  - 2. Type: B
- C. Size: 9.845 inches x 39.38 inches.
- D. Wear Layer Thickness: 22mil
- E. Total Thickness: .098 inches (2.5 mm)
- F. Backing Class: Commercial Grade
- G. Color: as selected from manufacturer’s full standard color range
- H. Patterns: As indicated on drawings.
- I. IIC Sound Rating: (ASTM E492-09) 57 IIC

## 2.4 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.



- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
  - 1. Adhesives shall comply with the following limits for VOC content:
    - a. Resilient Floor Adhesives: 60 g/L or less.
- C. Reducer between existing wood flooring and luxury vinyl tile: Provide resilient accessory between existing wood flooring that overlaps new lvt flooring to protect edges.
  - 1. Roppe
  - 2. Johnsonite

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - 1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products. Refer to manufacturer's requirements for floating floor installation as well.
- B. Concrete Substrates: Prepare according to ASTM F 710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  - 2. Mechanically remove contaminations on the substrate that may cause damage to resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc. must not be used to write on the back of the flooring material or used to mark on the substrate as they could bleed through and stain the flooring material.
  - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
  - 4. Moisture Testing:
    - a. Perform relative humidity (RH) test per ASTM F 2170 using an insitu (Wagner) probe. Proceed with installation only after obtaining three unique RH readings at each test hole and confirming with the Architect and the flooring manufacturer that the resulting RH levels are acceptable, typically below 80 percent relative humidity level. Testing should be performed in new concrete after 28 days.
    - b. Perform other tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
    - c. Should the substrate fail the RH test (ASTM F2170) or other moisture tests required by the manufacture, the floor must be treated with a topical moisture mitigation system

and the entire floor skim coated with a leveling compound. All components of the moisture mitigation system (the primer, the vapor mitigation treatment and the leveling compound) must be obtained from a single source.

- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install floor tiles until they are the same temperature as the space where they are to be installed.
  - 1. At least 48 hours in advance of installation, move resilient floor tile and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.
- F. Acclimatize the resilient tile flooring products per the manufacturers' instructions prior to installation to prevent expansion and contraction once the product is installed.

### 3.3 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
  - 1. LVT resilient planks are designed to be installed using glue down method. Follow specifically each manufacturer's substrate preparation requirements and installation requirements.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
  - 1. Lay tiles square with room axis in pattern indicated.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
  - 1. Lay tiles with grain running in one direction and in pattern of colors and sizes indicated.
- D. Install resilient tile floor coverings prior to the installation of the casework and millwork.
  - 1. Resilient tile flooring is to be installed under all casework, millwork, base, etc. in order to provide the Owner future flexibility in room layout and the ability to relocate or replace casework and millwork units.
- E. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- F. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.

- H. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- I. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

### 3.4 CLEANING AND PROTECTION

- A. Comply with each manufacturer's written instructions for cleaning and protecting floor tile.
- B. Perform the following operations immediately after completing floor tile installation:
  - 1. Remove adhesive and other blemishes from exposed surfaces.
  - 2. Sweep and vacuum surfaces thoroughly.
  - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect floor tile from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- D. Cover floor tile using manufacturer's recommended methods until Substantial Completion.

END OF SECTION 096519

## SECTION 009770 – IMPACT RESISTANT WALL PANELS

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section Includes:
  - 1. Fiberglass reinforced plastic paneling (FRP-1).
- B. Related Sections:
  - 1. Division 06 Section : Rough and Finish Carpentry
  - 2. Division 09 Section "Gypsum Board Assemblies" for metal stud framing system.

## 1.2 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, impact strength, fire-test-response characteristics, dimensions of individual components and profiles, and finishes for each impact-resistant wall protection unit.
- B. Shop Drawings: For each impact-resistant wall panel unit showing locations and extent. Include sections, details, and attachments to other work.
  - 1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below. Include Samples of accent strips to verify color selected.
  - 1. Impact-Resistant Wall Panels: 6 by 6 inches square.
  - 2. Trim pieces as specified.
- D. Qualification Data: For qualified Installer.
- E. Material Certificates: For each impact-resistant plastic material, from manufacturer.
- F. Material Test Reports: For each impact-resistant plastic material.
- G. Maintenance Data: For each type of wall protection unit to include in maintenance manuals.
  - 1. Include recommended methods and frequency of maintenance for maintaining optimum condition of plastic covers under anticipated traffic and use conditions. Include precautions against using cleaning materials and methods that may be detrimental to plastic finishes and performance.
- H. Warranty: Sample of special warranty.

### 1.3 QUALITY ASSURANCE

- A. **Installer Qualifications:** An employer of workers trained and approved by manufacturer. A minimum of 5 years experience is required for installer qualifications with composite wall panels similar in scope and size to this project
- B. **Source Limitations:** Obtain impact-resistant wall protection units from single source from single manufacturer.
- C. **Product Options:** Drawings indicate size, profiles, and dimensional requirements of impact-resistant wall panel units and are based on the specific system indicated. Refer to Division 01 Section "Quality Requirements."
  - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- D. **Surface-Burning Characteristics:** Provide impact-resistant, plastic wall protection units with surface-burning characteristics as determined by testing identical products per ASTM E 84, NFPA 255, or UL 723 by UL or another qualified testing agency.
- E. **Regulatory Requirements:** Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1, and State Accessibility Guidelines.

### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. **Store impact-resistant wall protection units in original undamaged packages and containers inside well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.**
  - 1. Maintain room temperature within storage area at not less than 70 deg F (21 deg C) during the period plastic materials are stored.
  - 2. Keep plastic sheet material out of direct sunlight.
  - 3. Store plastic wall panel components for a minimum of 72 hours, or until plastic material attains a minimum room temperature of 70 deg F (21 deg C).
    - a. Store panels in a horizontal position.
  - 4. **Handling:** Remove foreign matter from face of panel by using a soft bristle brush, avoiding abrasive action

### 1.5 PROJECT CONDITIONS

- A. **Environmental Limitations:** Do not deliver or install impact-resistant wall protection units until building is enclosed and weatherproof, wet work is complete and dry, and HVAC system is operating and maintaining temperature at 70 deg F (21 deg C) for not less than 72 hours before beginning installation and for the remainder of the construction period.

## 1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of impact-resistant wall panel units that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
    - a. Structural failures.
    - b. Deterioration of plastic and other materials beyond normal use.
  2. Warranty Period: Five years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 PRODUCTS

- A. Fiberglass Reinforced Plastic Panels (FRP-1): Fiberglass reinforced plastic panels complying with ASTM D5319. Chemical and stain-resistant, high-impact-resistant, integral color throughout, sheet material, thickness as indicated.
1. Fire Rating: IBC Class A / UL Class A as tested according to ASTM E84.
  2. Surface Burning Characteristics: Rating of 25 or less as tested according to ASTM E84.
  3. Flexural Strength: Minimum 18,000 PSI when tested according to ASTM D 790.
  4. Flexural Modulus: Minimum 590,000 PSI when tested according to ASTM D 790.
  5. Tensile Strength: Minimum 10,000 PSI when tested according to ASTM D 638.
  6. Barcol Hardness: Minimum 45 when tested according to ASTM D 2583.
  7. Impact Strength (Izod): Minimum 1.87 ft-lbf/in.
  8. Top Cap, End Cap, Seams, Inside and Outside Corners: Provide manufacturers standard PVC trim pieces.
  9. Basis-of-Design Manufacturer: As indicated on the Finish Legend sheet A1011.
    - a. Color: as selected by Architect from manufacturer's full standard color range.

## 2.2 FABRICATION

- A. Fabricate impact-resistant wall panel units to comply with requirements indicated for design, dimensions, and member sizes, including thicknesses of components.
- B. Assemble components in factory to greatest extent possible to minimize field assembly. Disassemble only as necessary for shipping and handling.
- C. Fabricate components with tight seams and joints with exposed edges rolled. Provide surfaces free of wrinkles, chips, dents, uneven coloration, and other imperfections. Fabricate members and fittings to produce flush, smooth, and rigid hairline joints.

## 2.3 METAL FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - 1. Remove tool and die marks and stretch lines, or blend into finish.
  - 2. Grind and polish surfaces to produce uniform finish, free of cross scratches.
  - 3. Run grain of directional finishes with long dimension of each piece.
  - 4. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
- B. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and wall areas, with Installer present, for compliance with requirements for installation tolerances, fire rating, and other conditions affecting performance of work.
- B. Examine walls to which impact-resistant wall panels will be attached for blocking, grounds, and other solid backing that have been installed in the locations required for secure attachment of support fasteners.
  - 1. For impact-resistant wall panel units attached with adhesive or foam tape, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1. Painted walls must be prepared to adhesive manufacturer's specifications for proper adhesion

### 3.2 PREPARATION

- A. Complete finishing operations, including painting, before installing impact-resistant wall protection system components.
- B. Before installation, clean substrate to remove dust, debris, and loose particles.

### 3.3 INSTALLATION

- A. General: Install wall panel units level, plumb, and true to line without distortions. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.
- B. FRP Adhesive Installation.
  - 1. Install impact-resistant wall panel units in accordance with manufacturer's instructions.

- a. Apply adhesive uniformly using adhesive manufacturer's recommendations to the entire back of panels completely to the edge and to the wall surface.
  - b. Follow adhesive manufacturer's recommendations for set and application time.
  - c. Apply pressure to entire panel face with laminate type 'J' roller removing trapped air and ensure proper adhesion between interior surfaces.
2. Install impact-resistant wall panel units in locations and at mounting heights indicated on Drawings.
  3. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation.
    - a. Provide anchoring devices to withstand imposed loads.
    - b. Where splices occur in horizontal runs of more than 20 feet (6.1 m), splice aluminum retainers and plastic covers at different locations along the run, but no closer than 12 inches (305 mm).
    - c. Adjust end and top caps as required to ensure tight seams.

#### 3.4 CLEANING

- A. Immediately after completion of installation, clean plastic covers and accessories using a standard, ammonia-based, household cleaning agent, or as recommended by manufacturer.
- B. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION 097700



## SECTION 098436 - SOUND-ABSORBING CEILING UNITS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes shop-fabricated, acoustical panel units tested for acoustical performance, including the following:
  - 1. Sound-absorbing ceiling panels.

#### 1.3 DEFINITIONS

- A. NRC: Noise Reduction Coefficient.
- B. SAA: Sound Absorption Average.

#### 1.4 PREINSTALLATION MEETINGS

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

#### 1.5 ACTION SUBMITTALS

- A. Product Data: Manufacturer's technical data for each type of panel including fire-resistive characteristics, finishes and installation details
- B. Shop Drawings: For unit assembly and installation.
  - 1. Include reflected ceiling plans, elevations, sections, and mounting devices and details.
  - 2. Include details at joints and corners; and details at ceiling intersections and intersections with walls. Indicate panel edge profile and core materials.
- C. Samples: (2) full size sets of samples for each specified panel style and color
  - 1. Include Samples of any exposed hardware and accessories involving color or finish selection.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
  - 1. Electrical outlets.
  - 2. Suspended ceiling components above ceiling units.
  - 3. Structural members to which suspension devices will be attached.
  - 4. Items penetrating or covered by units including the following:
    - a. Lighting fixtures.
    - b. Conduit
    - c. Speakers.
    - d. Vents/diffusers
    - e. Alarms.
  - 5. Show operation of hinged and sliding components covered by or adjacent to units.
- B. Product Certificates: For each type of unit.

## 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of unit to include in maintenance manuals. Include fabric manufacturer's written cleaning and stain-removal instructions.

## 1.8 QUALITY ASSURANCE

- A. Manufacture's Qualifications: Firm with not less than five years' experience in manufacturing of products similar in complexity to these required for this project.

## 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store materials flat in manufacturer's original unopened containers with brands, names, and production lot numbers clearly marked on these containers.
- B. Storage and Protection: Comply with manufacturer's recommendations.
  - 1. Store products flat in a cool, temperature-humidity controlled space
  - 2. Protect from damp, water soaked conditions, any possible damage.

## 1.10 FIELD CONDITIONS

- A. Environmental Limitations: Do not install units until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work at and above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Air-Quality Limitations: Protect units from exposure to airborne odors, such as tobacco smoke, and install units under conditions free from odor contamination of ambient air.

- C. Field Measurements: Verify unit locations and actual dimensions of openings and penetrations by field measurements before fabrication, and indicate them on Shop Drawings.

#### 1.11 WARRANTY

- A. Warranty: Provide manufacturer's written warranty to repair or replace units and components that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Acoustical performance.
    - b. Warping of core.

### PART 2 - PRODUCTS

#### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each toilet and bath accessory type(s) and system is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  - 1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.
    - b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
    - c. Indicate deviations, if any, from the Work specified.
- D. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

#### 2.2 MANUFACTURERS

- A. Source Limitations: Obtain ceiling units specified in this Section from single source from single manufacturer.
- B. Basis-of-Design Product: Provide the Basis-of-Design product or an equivalent product by one of the following manufacturers:
  - 1. WILLTECH Flat Sheets by Pinta Acoustic
  - 2. Acoustical Sheets by TECHLITE
  - 3. Approved Equal

C. Flat Acoustic Panels:

1. Basis-of-Design Product: WILLTECH flat sheets by Pinta Acoustics
2. Core Material: open-cell foam core
3. Face Material: HPC Applied surface finish
4. Flammability: Class 1 per ASTM E84
  - a. Flame Spread: 25 or less
  - b. Smoke Developed: 450 or less
5. Panel Thickness: 2 inches
6. HPC finish: to be selected by architect from manufacturer's full standard range. Finish to cover all exposed surfaces of panels
7. Acoustic Performance:
  - a. NRC = 1.00 at 2-inch thickness
8. Mounting: directly adhered to substrate with water-based adhesive approved for use by manufacturer

## 2.3 FABRICATION

- A. Standard Construction: Use manufacturer's standard construction unless otherwise indicated, with facing material applied to face, edges, and back border of dimensionally stable core and with rigid edges to reinforce panel perimeter against warpage and damage.
- B. Measure each area and establish layout of panels and joints of uniform size with balanced borders at opposite edges within a given area.
- C. Dimensional Tolerances of Finished Units: Plus or minus 1/16 inch for the following:
  1. Thickness.
  2. Edge straightness.
  3. Overall length and width.
  4. Squareness from corner to corner.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine fabricated units, substrates, areas, and conditions for compliance with requirements, installation tolerances, and other conditions affecting unit performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION

- A. Install units in locations indicated. Unless otherwise indicated, install units with edges in alignment with walls and other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.
- B. Comply with manufacturer's written instructions for installation of units. Adhere units securely to supporting substrate.

- C. Cleanly cut out back face of panels as required and as approved by manufacturer to account for surface mounted conduits such that the panels will sit flush to the substrate.

### 3.3 INSTALLATION TOLERANCES

- A. Variation of Joint Width: Not more than 1/32 inch-wide from hairline in 48 inches, noncumulative.

### 3.4 CLEANING

- A. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 098436

## SECTION 099113 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
  - 1. Exterior Wood Doors.

#### 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

## 1.5 QUALITY ASSURANCE

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

## 1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

1. Benjamin Moore & Co.
2. PPG Architectural Finishes, Inc.
3. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, provide one of the products listed in the Exterior Painting Schedule for the paint category indicated.

### 2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: Match Architect's samples.

### 2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner may engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Wood: 15 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.



- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Wood Substrates:
  - 1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
  - 2. Sand surfaces that will be exposed to view, and dust off.
  - 3. Prime edges, ends, faces, undersides, and backsides of wood.
  - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
  - 3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
  - 4. Paint entire exposed surface of window frames and sashes.
  - 5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 FIELD QUALITY CONTROL

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

### 3.5 CLEANING AND PROTECTION

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

### 3.6 EXTERIOR PAINTING SCHEDULE

- A. Wood Substrates: Exterior Doors
  - 1. Latex over Latex Primer System MPI EXT 6.3L:
    - a. Prime Coat: Primer, latex for exterior wood, MPI #6.
    - b. Intermediate Coat: Latex, exterior, matching topcoat.
    - c. Topcoat: Latex, exterior, semi-gloss MPI Gloss Level 5, MPI #163.

END OF SECTION 099113

## SECTION 099123 - INTERIOR PAINTING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
  - 1. Materials
    - a. Wood.
    - b. Gypsum board.
  - 2. Building Components
    - a. Doors and frames.
    - b. Interior trim.
    - c. Factory primed building components requiring finish painting.
    - d. Mechanical Systems (including but not limited to):
      - 1) Exposed sprinkler piping and standpipes.
      - 2) Factory primed access panels in walls and ceilings.
- B. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels as follows:
  - 1. Prefinished items including factory-finished components.
  - 2. Concealed surfaces include walls or ceilings in generally inaccessible spaces.
  - 3. Finished metal surfaces.
  - 4. Operating parts include moving parts of operating equipment.
  - 5. Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- C. Related Requirements:
  - 1. Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.

## 1.3 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
  - 2. Indicate VOC content.
- B. Shop Drawings: For interior painting.
  - 1. Show extent of interior painting systems on plans and elevations using designations from the Drawings and Finish Schedule.
    - a. Show locations of special primer coat required for glass mat faced gypsum board substrate.
    - b. Show on plans and elevations changes in color and coating systems.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches square.
  - 2. Apply coats on Samples in steps to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

#### 1.5 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
  - 1. Identify the product, fabrication method or installation method to be modified or replaced.

2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

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

#### 1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

### PART 2 - PRODUCTS

#### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each interior painting type and system is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.

- b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
  - c. Indicate deviations, if any, from the Work specified.
- D. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

## 2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- 1. Benjamin Moore & Co.
  - 2. ICI Paints.
  - 3. PPG Architectural Finishes, Inc.
  - 4. Sherwin-Williams Company (The).
- A. Basis-of-Design Product: Interior Paint
- 1. Sherwin-Williams Company (The); SuperPaint Interior Latex Satin A87 Series.
  - 2. Sherwin-Williams Company (The); SuperPaint Interior Latex Semi-Gloss A88 Series.

## 2.3 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
- 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Colors: Match Architect's samples.
- 1. Twenty percent of surface area will be painted with deep tones.

## 2.4 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
- 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  - 2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## 2.5 FIELD-FINISHED WOOD FLOORING

- A. Urethane Finish System: Complete solvent-based, oil-modified system of compatible components that is recommended by finish manufacturer for application indicated.
  1. Acceptable floor finish manufacturers include:
    - a. Poloplaz
    - b. Bona Kemi
    - c. Hillyard
    - d. Hunting
  2. Stain: None
  3. Floor Sealer: Pliable, penetrating type.
  4. Finish Coats: Formulated for multicoat application on wood flooring.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Wood: 15 percent.
  2. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer<sup>6</sup>, but not less than the following:
  - 1. SSPC-SP 2.
  - 2. SSPC-SP 3.
  - 3. SSPC-SP 7/NACE No. 4.
  - 4. SSPC-SP 11.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Wood Substrates:
  - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
  - 2. Sand surfaces that will be exposed to view, and dust off.
  - 3. Prime edges, ends, faces, undersides, and backsides of wood.
  - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
  - 5. For refinishing existing wood flooring, prepare surface per finish manufacturer's requirements.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1. Use applicators and techniques suited for paint and substrate indicated.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.



6. Finish interior doors on tops, bottoms, and side edges the same as interior faces.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
  1. Paint the following work where exposed in equipment rooms:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Tanks that do not have factory-applied final finishes.
    - h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
  2. Paint the following work where exposed in occupied spaces:
    - a. Equipment, including panelboards.
    - b. Uninsulated metal piping.
    - c. Uninsulated plastic piping.
    - d. Pipe hangers and supports.
    - e. Metal conduit.
    - f. Plastic conduit.
    - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    - h. Other items as directed by Architect.
  3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

### 3.4 FIELD QUALITY CONTROL

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

additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 3.5 CLEANING AND PROTECTION

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

### 3.6 INTERIOR PAINTING SCHEDULE

#### A. **Steel Substrates:**

- 1. Institutional Low-Odor/VOC Latex System MPI INT 5.1S:
  - a. Prime Coat: Primer, rust inhibitive, water based MPI #107.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
  - a. Topcoat(s):
    - 1) Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145.
    - 2) Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

#### B. **Galvanized-Metal Substrates:**

- 1. Institutional Low-Odor/VOC Latex System MPI INT 5.3N:
  - a. Prime Coat: Primer, galvanized, water based, MPI #134.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
  - c. Topcoat(s):
    - 1) Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145.
    - 2) Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

#### C. **Wood Substrates:** Wood trim, architectural woodwork, doors, and windows.

- 1. Institutional Low-Odor/VOC Latex System MPI INT 6.3V:
  - a. Prime Coat: Primer, latex, for interior wood, MPI #39.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

- c. Topcoat(s):
  - 1) Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145.
  - 2) Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

**D. Gypsum Board and Plaster Substrates:** Paper face.

- 1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
  - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
  - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
  - c. Topcoat(s):
    - 1) Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145.
    - 2) Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

END OF SECTION 099123

## SECTION 102800 – TOILET AND BATH ACCESSORIES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

## A. Section Includes:

- 1. Public-use washroom accessories.
- 2. Custodial accessories.

## B. Related Requirements:

- 1. Section 061053 "Miscellaneous Rough Carpentry" for wood blocking support to toilet and bath accessories.

## 1.3 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.
- B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

## 1.4 ACTION SUBMITTALS

## A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- 2. Include anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.

## B. Samples: Full size, for each exposed product and for each finish specified.

- 1. Approved full-size Samples will be returned and may be used in the Work.

## C. Shop Drawings: For toilet and bath accessories.

- 1. Show extent of toilet and bath accessories on plans and elevations using designations from the Drawings and Toilet Accessory Schedule.

- a. Show location, type, and size of each different accessory.
  - b. Show mounting heights and dimensioned layout.
  - c. Show configurations and lengths of grab bars.
  2. Coordinate locations with required use and service clearances.
  3. Coordinate locations with requirements for access by people with disabilities.
  4. Include details of special installation conditions, including anchorage to substrates.
- D. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
1. Identify locations using room designations indicated.
  2. Identify accessories using designations indicated.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For accessories to include in maintenance manuals.

#### 1.6 PROPOSED SUBSTITUTIONS

- A. Proposed substitutions, by the Contractor, of products or materials shall be submitted for approval prior to the submission of shop drawings. Proposed modifications to details will be submitted, in sketch drawing form, prior to the submission of shop drawings, for review and approval.
- B. Coordinate and indicate in the proposed product, material and detail modification compliance with the specified work.
1. Identify the product, fabrication method or installation method to be modified or replaced.
  2. Indicate installation method, changes to other parts of the specified work, integration with other components detailed in the work that will be required to accommodate the proposed substitution.
- C. Substitutions shall be made only when approved by the Architect, and at no additional cost to Owner. Total amount of credit, if any, shall be stated in writing with the submission.
- D. Proposed substitutions shall include a detailed analysis of impact to other building systems, including related design or construction cost impacts.
- E. Substitution Form: No substitutions will be considered without the completed 'Substitution Request Form' and accompanying supporting documentation. Substitutions made without completion of this form will be considered defective work as stated in AIA A201.

#### 1.7 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, visible silver spoilage defects.
2. Warranty Period: 15 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each toilet and bath accessory type(s) and system is based on the product named and detailed in the Specification and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.
- C. Burden of proof demonstrating the equality of comparable products to the quality level, design requirements, and performance characteristics of the Basis of Design Product rests solely with the Contractor and Subcontractor.
  1. Submit detailed comparison of significant qualities of comparable product with those of the Work (Basis of Design Product) specified.
    - a. Include annotated copy of applicable Specification Section.
    - b. Significant qualities may include attributes such as performance, weight, size, dimensions, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated.
    - c. Indicate deviations, if any, from the Work specified.
- D. Submit coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by separate contractors that will be necessary to accommodate proposed substitution or use of comparable products.

### 2.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Source Limitations: Obtain public-use washroom accessories from single source from single manufacturer.
- B. Basis-of-Design Product: Provide the Basis-of-Design product or an equivalent product by one of the following manufacturers:
  1. American Specialties, Inc.
  2. Bobrick Washroom Equipment, Inc.
  3. Bradley Corporation
  4. Approved Equal
- C. Surface-mounted Toilet Tissue (Roll) Dispenser: Owner Furnished – Contractor Installed
  1. Coordinate specific mounting details with Owner
- D. Surface-mounted Paper Towel (Roll) Dispenser: Owner Furnished – Contractor Installed
  1. Coordinate specific mounting details with Owner
- E. Floor Trash Receptacle: Owner Furnished – Contractor Installed

1. Coordinate specific mounting details with Owner
- F. Surface-mounted Liquid-Soap Dispenser: Owner Furnished – Contractor Installed
1. Coordinate specific mounting details with Owner
- G. Grab Bar:
1. Basis-of-Design Product: Bobrick B-6806.99
  2. Mounting: Flanges with concealed fasteners.
  3. Material: Type 304 Stainless steel, 0.05 inch thick.
    - a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
  4. Outside Diameter: 1-1/2 inches.
  5. Configuration and Length: As indicated on Drawings.
- H. Toilet Room Mirror:
1. Basis-of-Design Product: Verduzco Rustic Wood Wall Mirror
  2. Mounting: Surface
  3. Material: Metal sub-frame with distressed Chestnut main frame
  4. Size: 34” high x 21” wide x 1.5” deep
  5. Weight: 17.5 pounds
- I. Sanitary-Napkin Disposal Unit:
1. Basis-of-Design Product: Bobrick B-353
  2. Mounting: Recessed
  3. Size: 11-1/4” wide x 15-5/8” high x 4” deep
  4. Door or Cover: Self-closing, disposal-opening cover and hinged face panel with tumbler lockset.
  5. Receptacle: Plastic, removable.
  6. Material and Finish: Type 304 Stainless steel, No. 4 finish (satin) finish.
- J. Toilet Room Shelf:
1. Basis-of-Design Product: Custom wood shelf with metal brackets as indicated on the drawings
- K. Coat Hook:
1. Basis-of-Design Product: Bobrick B-76727
  2. Description: Double-hook unit
  3. Material and Finish: Stainless steel, No. 4 finish (satin).
  4. Location/Amount: (2) on the back of each Toilet Room Door
    - a. Mount one at 60” and the second at 42” above finished floor level
- 2.3 CUSTODIAL ACCESSORIES
- A. Source Limitations: Obtain custodial accessories from single source from single manufacturer.
- B. Mop and Broom Holder:
1. Basis-of-Design Product: Bobrick B-224 x 36
  2. Description: Unit with shelf, hooks, mop holders, and drying rod suspended beneath shelf.
  3. Length: 34 inches
  4. Hooks: Three.

5. Mop/Broom Holders: Four, spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, No. 4 finish (satin).
  - a. Shelf: Type 304, 18 gauge stainless steel.
  - b. Rod: Type 304 stainless steel, 1/4-inch- diameter

## 2.4 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.
- B. Brass: ASTM B 19, flat products; ASTM B 16/B 16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.
- C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch (0.9-mm) minimum nominal thickness.
- D. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.
- E. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.
- G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).
- H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

## 2.5 FABRICATION

- A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.
- B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf , when tested according to ASTM F 446.



3.2 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written instructions.

END OF SECTION 102800

## SECTION 104400 - INTERIOR SIGN SYSTEM.

## PART 1 - GENERAL

## 1.1 SIGN SYSTEM DOCUMENTS

- A. The sign system documents include these Specifications, Sign Message Schedule, Sign Location Plans and Sign Construction Drawings.
- B. Purpose: These specifications and drawings are for design intent and do not relieve the contractor of mechanical and engineering required for signs described or specified in these Specifications or on the Sign Construction Drawings (Design Intent Specifications). The drawings are to be used as a guide for finish engineering. Reproduction of the drawing specifications may not be substituted for the sign contractor's engineered shop drawings.

## 1.2 SUMMARY

- A. The work in this section consists of interior building identification (interior changeable modular signs, mounted on a perforated chassis), ADA permanent room signs, directional signs, and regulatory signs.
- B. Manufacturer Qualifications: Work under this section from manufacturers regularly engaged in work of this magnitude and scope for minimum of seven years.
  - 1. Provide sample prototype panel with photopolymer and panel construction as defined in this package for one sign type (MNS-2 and submit along with bid documents.
- C. Pre-installation Conference: Review requirements for construction and installation of signs specified in the sign package, schedule and procedures stipulated by the General Contractor.

## 1.3 CONTRACTOR PRICING

- A. The sign contractor to price the construction and installation of the sign system as defined in these Specifications and the Sign Package including; Sign Message Schedule, sign Construction Drawings and Sign Location Plans. The sign system is comprised of interchangeable parts as defined in the drawings.
- B. The Contractor to provide pricing to include the following:
  - 1. Provide pricing for construction of all signs described in this sign package.
  - 2. Provide separate pricing for installation of all signs described in this sign package.
  - 3. Unit prices: Provide installed unit prices for each sign type unit in the system for extra possible required signage.
  - 4. Provide fixed unit pricing for installed signs for a period of two years after the initial installation.
  - 5. Provide temporary signage to meet with requirements for occupancy based of information and general layouts provided in the sign program documents.

#### 1.4 REGULATORY REQUIREMENTS

- A. Comply with all federal and state municipal codes, laws and regulations regarding signs for identifying rooms, including American with Disabilities Act. Notify the designer if any signage in this package is not in conformance prior to beginning the work.

#### 1.5 REFERENCES

- A. Standards of the following as referenced:
  - 1. American National Standards Institute (ANSI).
- B. Industry standards:
  - 1. Department of Justice, Office of the Attorney General, "Americans with Disabilities Act", Public Law 101-336, (ADA).
  - 2. ANSI A 117.1: Providing Accessibility and Usability for Physically Handicap People, 1986 edition.
  - 3. Federal Register Part III, Department of Justice, Office of the Attorney General, 28 CFR Part 36: Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, Final Rule, July 26, 1991.
  - 4. Federal Register Part II, Architectural and Transportation Barriers Compliance Board, 36 CFR Part 1191: Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Amendment to Final Guidelines, September 6, 1991.

#### 1.6 DEFINITIONS

- A. Terms:
  - 1. Braille: Grade 2 Braille including 189 part-word or whole word contractions in addition to Grade 1 Braille 63 characters. Tactile is required whenever Braille is required; see SYSTEM DESCRIPTION Article below.
  - 2. Non-tactile: Letters and numbers on signs with width-to-height ratio between 3:5 and 1:1 and stroke width ratio between 1:5 and 1:10 using upper case "X" to calculate ratios. Use typestyles with medium weight; upper and lower case lettering is permitted; See SYSTEM DESCRIPTION Article below.
  - 3. Symbols: Symbol itself is not required to be tactile, however tactile symbols are specified for this program.
  - 4. Tactile: 1/32" raised capital letters without serifs at least 5/8" height and not more than 2" height based on upper case "X". Braille is required whenever tactile is required; See SYSTEM DESCRIPTION Article below.

#### 1.7 SYSTEM DESCRIPTION

- A. Signage under this section is intended to include items for identification, direction, regulatory and information for the building.
- B. ADA Design Requirements:
  - 1. Signage requiring tactile graphics:

- a. Wall mounted signs designating permanent rooms and spaces such as, room numbers, room identification, and restrooms.
  2. Signage not requiring tactile graphics but require compliance to other ADA requirements: All other signs providing direction to or information about function of space such as, directional signs (signs with arrow), informational signs (operating hours, policies, etc.), regulatory signs (no smoking, do not enter), and ceiling and projected wall mount signs.
  3. Excluded signage:
    - a. Exterior signs. Exterior non-smoking sign is to be included in bid.
    - b. Building directories.
- C. ADA Performance Requirements:
1. Tactile graphics signs mounting requirements:
    - a. Single doors: Mount 60" to sign centerline above finish floor and on wall adjacent to latch side of door. Refer to drawings for exact location.
    - b. No wall space adjacent latch side of door, opening, or double doors: Mount 60" to sign centerline above finish floor on nearest adjacent wall. Align with locations as shown in the drawings.

## 1.8 SUBMITTALS

### A. Product Data:

1. Manufacturer's signed statement of Warrantee.
2. Data and cleaning requirements for interior surfaces.

### B. Shop Drawings:

1. Indicate materials, sizes, configurations, applicable substrate mountings, and location of connections provided in other sections. Specifically indicate tolerances between butting panels as defined in drawings.
2. Typography sample for copy.
3. Artwork and graphics showing layouts for each sign type.
4. The manufacturer shall furnish to the Owner and Designer and Architect, prior to fabrication, copies of shop drawings (including layout, profiles, product components, details (including dimensions, anchorage, and accessories), sizes, and dimensions of each sign type, product description, and manufacturer's data).
5. Shop drawings to be submitted in PDF file format to the Architect, the General Contractor and the Owner. Hard copies may be requested by the General Contractor or any of the entities above. The Contractor will be notified if required.
6. A copy of the shop drawings shall be returned as a marked up PDF file to the manufacturer with the client's comments if any, and bearing the Architect's approval or indicating action taken.
7. Work shall be executed in accordance with "No Exceptions Taken" or "Make Corrections Noted" drawings only.

8. The Architect's review of shop drawings shall constitute checking for general arrangement only, and shall not relieve the manufacturer of responsibility for complete compliance with the drawings and specifications.
9. Material, color and paint samples, as called for hereinafter, shall be submitted to the Architect. Two copies of each sample are required and shall be exact reproductions of each requested material. Samples shall bear a label giving the name of the manufacturer, the trade name of the material, and all other information necessary to identify the material. Labels shall have 4"x4" blank area (on back side).

#### 1.9 SAMPLE SUBMITTALS

- A. Listed are the sample materials required (2 sets of each of the following):
- B. Paint and Materials
  1. 4"x4" inch portion of the same material which is to receive the paint for each color indicated on the construction drawings and in the paint schedule.
- C. Sign Samples (2 sets of each of the following):
  1. Minor Space sign type (103 Breakout Room) comprised of Sign Type MNS-2 complete sample with painted components in place with graphics and text, include "infinity" chassis and backer plate as specified on drawings.
  2. Restroom sign type RES-1 (SINGLE RESTROOM) complete with graphics and text, use name as shown on drawing package.
  3. Mechanical Room sign type MEC-2 (105A Custodial).

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Acceptance at Site: Coordinate delivery of work to Project site under this section for immediate installation.
- B. Handling materials and equipment: Handle signage in careful manner in order not to damage or mar surfaces of signs or adjacent finish surfaces as applicable.

#### 1.11 SEQUENCING AND SCHEDULING

- A. Coordinate: Installation with adjacent finish materials in manner not to destroy adjacent surfaces.

#### 1.12 WARRANTY

- A. Special Warranty: Manufacturer's standard seven year limited warranty covering coating degradation, chalking and fading.

### PRODUCTS

#### 1.13 BASIS OF DESIGN

- A. ASI Sign Systems, Inc.; interior changeable modular signs, mounted on a perforated chassis; Infinity Series.

## 1.14 MATERIALS

- A. Interior signs consisting of sign panels with integrated photopolymer raised lettering and Braille, painted panels mounted on a power coated perforated steel chassis. Raster tactile text is not acceptable. Non-tactile signs shall have screened printed text.
1. Photopolymer: Signs with raised tactile graphics shall be produced utilizing a 1/32" thick synthetic light-sensitive photo emulsion as one rigid phenolic piece of material. Laminated polymer materials not acceptable. Photopolymer manufactured by Jet USA Corp., Collingdale, PA, or approved equal. Photopolymer shall be an appropriate thickness to achieve 3/16" thick finish panel coplanar with non-raised adjacent panels.
  2. Braille: All room numbers and room names, where required on the sign schedule, shall have Grade 2 Braille translations.
  3. Paint: All sign plaques shall receive one coat of filling primer and two coats of satin acrylic catalyzed polyurethane paint. Catalyzed polyurethane paint shall be MAP, as manufactured by Matthews Paint Company, Kenosha, WI, or approved equal. Custom color matches will be required as specified in the construction drawings. Exact colors will be determined during the submittal phase.
  4. Screen-printing: All screen-printed graphics, including raised lettering of plaques, except Braille, shall be screen-printed in a contrasting color so as to meet the color contrast requirements of Americans with Disabilities Act. All non-tactile text shall be screen-printed. No vinyl lettering on plaques will be accepted except where specified. Screen-printing ink shall be ER Series, catalyzed epoxy ink as manufactured by Naz Dar Corp., Chicago, IL, or approved equal.
  5. Letter Style: Shall be fonts, as specified in the construction drawings.
  6. Graphics: All text, symbols and graphics shall be reproduced utilizing computer generated digital art. Match pictogram symbols as shown in the drawings.
  7. Acrylic/Phenolic (CNC) computer numeric controlled precision cut panels: Provide acrylic/phenolic materials for room signs specified to have painted finishes. Sign types that are specified to use metals with finishes such as; satin anodized, brushed, etched or engraved metals to be produced from bronze. Chem-metals or other laminate type materials are not acceptable.
  8. Chassis Cold rolled, low carbon steel, die perforated 18 ga. Sheet with high temperature cured power coating.

## 1.15 QUALITY ASSURANCE

- A. Room Sign Construction: All sign plates that attach to chassis and that position along side, above or beneath adjacent plates to have precise fit (1/32" gap  $\pm$  .007") with consistent space tolerances between plates as defined in the construction drawings.
- B. All sign panel plates and parts to be manufactured as consistent interchangeable components and will allow for the replacement of identically sized part components as needed to upgrade and change message plates, donor plates, or note bar as shown in drawings after the system has been installed.

1.16 INSERT SIGNS

- A. The University shall supply, print and install their own 8-1/2" x 11" color laser printed schedules/calendars into card insert holders (Type CHK-V). The sign contractor to supply and install the insert holder.

**PART 2 EXECUTION**

2.1 EXAMINATION

- A. Verification of conditions:
  - 1. Examine areas to receive signs; verify for correct location all anchors and internal mounting plates required to install signs.
  - 2. Notify General Contractor in writing of unacceptable substrate or improper location of anchors.
  - 3. Beginning work indicates acceptance of substrate. Subsequent modifications to substrate becomes the Contractor's complete responsibility.

2.2 INSTALLATION

- A. Install signs in locations indicated in accord with reviewed shop drawings. Square, plumb, and level units.
- B. Notify the Architect if conditions in the field vary from those shown in these documents.

2.3 CLEANING

- A. Clean exposed surfaces not more than 48 hours prior to Date of Substantial Completion in accord with manufacturers written cleaning instructions.

2.4 SCHEDULE

- A. Coordinate with General Contractor.

**END OF SECTION**

## SECTION 104416 - FIRE EXTINGUISHERS

### 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 portable, fire extinguishers and mounting brackets for fire extinguishers.
- B. Related Requirements:
  - 1. Section 06 1053 "Miscellaneous Rough Carpentry"

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.
- B. Product Schedule: For fire extinguishers. Coordinate final fire-extinguisher schedule with fire-protection cabinet schedule to ensure proper fit and function. Use same designations indicated on Drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Warranty: Sample of special warranty.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

#### 1.6 COORDINATION

- A. Coordinate type and capacity of fire extinguishers with fire-protection cabinets to ensure fit and function.

#### 1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.



1. Failures include, but are not limited to, the following:
  - a. Failure of hydrostatic test according to NFPA 10.
  - b. Faulty operation of valves or release levers.
2. Warranty Period: Six years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 BASIS-OF-DESIGN PRODUCTS

- A. The design for each fire extinguisher type is based on the products named and detailed in the Specifications and Drawings to establish the quality level and design requirements for the project. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.
- B. Substitution of comparable products and materials specified shall be in accordance to the 'Proposed Substitution' procedures.

### 2.2 PERFORMANCE REQUIREMENTS

- A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
- B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.
  1. Provide fire extinguishers approved, listed, and labeled by FM Global.

### 2.3 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

- A. Fire Extinguishers: Type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide the named product or a product by one of the following:
    - a. Guardian Fire Equipment, Inc.
    - b. JL Industries, Inc.; a division of the Activar Construction Products Group.
    - c. Kidde Residential and Commercial Division; Subsidiary of Kidde plc.
    - d. Larsens Manufacturing Company.
  2. Valves: Manufacturer's standard.
  3. Handles and Levers: Manufacturer's standard.
  4. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B, and bar coding for documenting fire-extinguisher location, inspections, maintenance, and recharging.
- B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 3-A:40-B:C, 5-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container:
  1. FE-1: Cosmic 5E by JL Industries, a division of Activar Construction Products Group

## 2.4 MOUNTING BRACKETS

- A. Mounting Brackets: Manufacturer's standard galvanized steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or red baked-enamel finish.
  - 1. Basis-of-Design Product: Provide the recommended mounting bracket from the same manufacturer as the extinguisher.
- B. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location.
  - 1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" on a 5" x 6" red plastic 3D tent sign located above the extinguisher or as directed by the authorities having jurisdiction.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine fire extinguishers for proper charging and tagging.
  - 1. Remove and replace damaged, defective, or undercharged fire extinguishers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Install fire extinguishers and mounting brackets in locations indicated on Drawings and in compliance with requirements of authorities having jurisdiction.
  - 1. Mounting Brackets: 54 inches above finished floor to top of fire extinguisher.
- B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION 104416

## SECTION 220000 - PLUMBING

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods and services referenced in or related to this Section shall also be bound by the Documents identified in Division 1.

## 1.02 REFERENCES

- A. Conditions of the Contract and Division 1, General Requirements, apply to work of this Section. Where Paragraphs of this Section conflict with similar paragraphs of Division 1, requirements of this Section shall prevail.
- B. The attention of this contractor is directed to Part 3, Paragraph 3.01 of this Section, which contains instructions for commissioning of systems and equipment.
- C. Examine Drawings and other Sections of Specifications for requirements that affect work of this Section.

## 1.03 DEFINITIONS

- A. As used in this Section, "provide" means "furnish and install" and "HVAC" means "Heating, Ventilating and Air Conditioning" and "POS" means "Provided under Other Sections". "Furnish" means "to purchase and deliver to the project site complete with every necessary appurtenance and support," and "Install" means "to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project."

## 1.04 GUARANTEE/WARRANTY

- A. Guarantee work of this Section in writing for one year following the date of initial building occupancy or turning over of the building to the owner, whichever is earlier. Repair or replace defective materials, equipment, workmanship and installation that develop within this period.

## 1.05 SCOPE

- A. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specification. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation.
- B. Furnish and install or perform the following, as shown on the drawings and as specified herein:
  - 1. Interior sanitary waste and vent piping system connecting to existing systems as shown on the plans.
  - 2. Interior domestic water piping systems connecting to existing systems as shown on the plans.
  - 3. Plumbing fixtures and trim.
  - 4. Local thermostatic mixing valves.

5. Insulation.
6. Valves.
7. Water hammer arrestors.
8. Fittings, unions, flanges and couplings.
9. Hangers, plates and inserts.
10. Cleaning, testing and disinfection.
11. All supplementary steel for piping and equipment support.
12. Guarantees.
13. Drilling for installation of inserts.
14. Core drilling.
15. Scaffolding, hoisting and rigging.
16. Sleeves.

C. Furnish following items for installation under other Sections:

1. Access panels
2. Starters.

#### 1.06 CONTRACT DOCUMENTS

- A. Refer to Architectural, Electrical, and other Drawings and other Sections that indicate types of construction in which work shall be installed and work of other trades with which work of this Section must be coordinated.

#### 1.07 DISCREPANCIES IN DOCUMENTS

- A. Where Drawings or Specifications do not coincide with manufacturer's recommendation, or with applicable codes and standards, alert Architect in writing before installation.
- B. In cases where the contractor believes he needs engineering guidance, he shall submit a sketch identifying his proposed solution and the Architect shall review the sketch and note if necessary.

#### 1.08 MODIFICATIONS IN LAYOUT

- A. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Architect.
- B. Check Contract Drawings as well as Shop Drawings of all subcontractors to verify and coordinate spaces in which work of this section will be installed.
- C. Maintain maximum headroom at all locations. All piping, duct, conduit, and associated components to be as tight to underside of structure as possible.
- D. Make reasonable modifications in layout and components needed to prevent conflict with work of other trades and to coordinate according to Paragraphs A, B & C above. Systems shall be run in a rectilinear fashion.
- E. Where conflicts or potential conflicts exist, and engineering guidance is desired, submit sketch of proposed resolution to Architect for review and approval.

#### 1.09 RELATED WORK IN OTHER SECTIONS

- A. The following work is not included in this Section and will be performed under other Sections (abbreviation POS on Drawings means, "Provided Under Other Sections"):
1. SECTION 033000 CAST-IN-PLACE CONCRETE: Concrete work, including concrete housekeeping pads and other pads and blocks for vibrating and rotating equipment.
  2. SECTION 010450 CUTTING AND PATCHING: Cutting and patching of masonry, concrete, tile and other parts of structure, except drilling for hangers, providing holes and openings in metal decks and core drilling.
  3. SECTION 083050 ACCESS PANELS: Installation of access panels in floor, wall, furred space or above ceiling.
  4. SECTION 099000 PAINTING: Painting, except as specified herein.
  5. SECTION 260000 ELECTRICAL: Electric power wiring for equipment.
  6. SECTION 015000 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS: Temporary light, power, and heat for use during construction and testing.
  7. SECTION 10810 TOILET ACCESSORIES: The provision of toilet room accessories such as toilet paper holders, mirrors, and soap dispenser.

#### 1.10 CODES, STANDARDS, AUTHORITIES AND PERMITS

- A. Perform work in strict accordance with the rules, regulations, standards, codes, ordinances, and laws of local, state, and federal governments, and other authorities that have legal jurisdiction over the site. Materials and equipment shall be manufactured, installed and tested as specified in latest editions of applicable publications, standards, rulings and determinations of:
1. Local and state building, plumbing, mechanical, electrical, fire, health and Environmental department codes.
  2. National Fire Protection Associates (NFPA).
  3. American Insurance Association (A.I.A.) (formerly National Board of Fire Underwriters).
  4. Occupational Safety and Health Act (OSHA).
  5. Factory Mutual Association (FM).
  6. Underwriters' Laboratories (UL).
- B. Material and equipment shall be listed by Underwriters' Laboratories (UL), and approved by ASME, AGA, and FM for intended service.
- C. Most recent editions of applicable specifications and publications of the following organizations form part of Contract Documents:
1. American National Standards Institute (ANSI).
  2. American Society of Mechanical Engineers (ASME).
  3. National Electric Manufacturers Association (NEMA).
  4. American Society for Testing and Materials (ASTM).
  5. American Water Works Association (AWWA).
- D. Secure and pay for all permits and inspections required by any of the authorities having jurisdiction.

#### 1.11 RECORD DRAWINGS

- A. Maintain at the job site at all times a complete set of black line prints and mark accurately, clearly and completely the actual installation in accordance with the requirements of this Section.

#### 1.12 BULLETINS, MANUALS, AND OPERATING INSTRUCTIONS, AND PROTECTION

- A. Obtain at time of purchase of equipment, lubrication and maintenance manuals for all items. Assemble literature in coordinated manuals. Manual shall contain names and addresses of manufacturers and local representatives who stock or furnish repair parts for items or equipment. Divide manuals into three sections or books as follows:
  - 1. Directions for and sequence of operation of Plumbing system components. List valves, switches and other devices used to control system. Detail procedure to be followed in case of malfunctions. Include detailed approved flow diagrams and approved directory, showing valve numbers and locations and equipment or fixture controlled by valves.
  - 2. Detailed maintenance and trouble shooting manuals containing data furnished by manufacturer for complete maintenance.
  - 3. Lubrication instructions detailing type of lubricant, amount, and intervals recommended by manufacturer for each item of equipment. Include additional instructions necessary for implementation of first class lubrication program. Include approved summary of lubrication instructions in chart form, where appropriate.
- B. Operating Instructions: Upon completion of installation or when Owner accepts portions of building and equipment for operational use, instruct Owner's operating personnel in any or all parts of various systems. Instructions shall be performed by factory-trained personnel. Owner shall determine which systems require additional instructions. Duration of instructions shall take equipment through complete cycle of operation (at least five working days). Adjust under operating conditions.
- C. Each contractor shall be responsible for his work and equipment until finally inspected, tested, and accepted. Carefully store materials and equipment that are not immediately installed after delivery to site. Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material.
- D. Each separate contractor shall protect the work and material of other trades that might be damaged by his work or workmen and make good all damage thus caused.

#### 1.13 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

- A. Shop Drawings
  - 1. Sanitary waste specialties
  - 2. Fixtures
- B. Product Data
  - 1. Valves
  - 2. Hangers and Supports
  - 3. Insulation

4. Water piping
5. Sanitary waste and vent piping
6. Fixtures

## C. Samples

1. Plumbing ID

## D. Test Reports

1. Water piping
2. Sanitary waste

## E. O&amp;M Data

1. Fixtures

## PART 2 - PRODUCTS

## 2.01 PLUMBING FIXTURES

- A. Provide plumbing fixtures as shown on Architectural and Plumbing Drawings.
- B. Fixture trims, traps, faucets, escutcheons and waste pipes exposed to view in finished spaces shall be I.P.S. brass with polished chromium plating over nickel finish.
- C. Enameled cast iron ware shall be thickness necessary to form fixtures of highest commercial grade. Treat exterior exposed surfaces not enameled with one coat of filler at factory.
- D. Provide air gaps at least twice diameter of waste pipe between level of each supply opening (except outlets protected with vacuum breakers) and flood rim of fixture receptacle.
- E. Set fixtures with wall outlet flanges at proper distance from floors and walls with closet setting compound or gasket.
- F. Refer to Architectural and Plumbing Drawings for quantities, locations and mounting heights of fixtures provided under this Section.
- G. Catalog designations and manufacturers' names are specified to establish standards of quality for performance and materials. Equivalent fixtures by Kohler, Zurn, or Crane Co. may be submitted for approval.

## 2.02 PIPE MATERIALS

- |    |                   |  |
|----|-------------------|--|
| A. | Service:          | Above ground domestic water piping.  |
|    | Pipe Material:    | Type L copper tubing, conforming to Federal Specification WW-T-799 hard temper.  |
|    | Fitting Material: | Wrought copper and bronze solder joints or ProPress.                             |
|    | Pipe Joint:       | Solder Joint, 95-5 solder lead free or Silverbrite solder.                       |
|    |                   |  |
| B. | Service:          | Above ground, sanitary waste and vent.   |
|    | Pipe Material:    | Service weight cast iron no-hub conforming to CS301-72, or type DWV copper tube. |

Fitting Material: Cast iron, cast brass, stainless steel or wrought copper drainage fittings to suit pipe material.

Pipe Joint: Gasket, screwed or soldered (50-50). Copper shall not be used for urinal waste. Silverbrite solder for pipe joints as required.

## 2.03 VALVES

- A. Each valve type shall be product of single manufacturer. Each system shall be provided with valves as required by code and as shown on drawings. Valves shall be installed to facilitate operation, replacement and repair. Provide access panels where valves are concealed behind removable ceilings or walls. Provide shut-off valves for supply piping to individual pieces of equipment.
- B. Ball Valves
  - 1. Milwaukee Valve Model #BA-150 ball valves 3" and smaller on water services shall be 2 piece all bronze with full port-chrome plated ball, teflon seats, solder ends.
  - 2. Ball valves on insulated piping shall have 2-1/4" extended stems.
  - 3. Ball valves manufactured by Jenkins, Apollo or Watts are approved equals.
- C. Check Valves
  - 1. Milwaukee Valve Model #1509, horizontal swing, all bronze with sweat ends.
  - 2. Check valves manufactured by Jenkins, Apollo or Watts are approved equals.
- D. Vacuum Breakers
  - 1. Atmospheric vacuum breakers shall be all-bronze, for temperatures up to 210 degrees F: Watts 288A, Neptune 55 or Febco 710A.

## 2.04 INSULATION

- A. Insulation shall be by Owens-Corning, Certain-Teed or Manville.
- B. Insulation shall be installed by insulation firm regularly specializing in this work and employing men particularly skilled therein. No covering applied by plumber's helpers will be acceptable.
- C. Insulation installation shall meet manufacturer's recommendations. No insulation shall be applied until piping has passed tests as required by authorities that have jurisdiction.
- D. Insulation, jackets and adhesives shall be flame retardant and shall have ASTM E-84 fire hazard ratings of 25 flame spread, 50-smoke developed, and 50-fuel contributed.
- E. Insulation and jacketing shall be in accordance with following:
  - 1. Domestic hot water supply piping shall be insulated with heavy density fiberglass with self-sealing lap and all service jacket (ASJ). Fittings and valves shall be insulated with two layers of pre-cut fiberglass blanket insulation jacketed with pre-formed PVC covers. Insulation shall be rated for maximum operating temperature of 450 degrees F. Insulation thickness shall be 1".
  - 2. Domestic cold-water supply piping, valves and fittings, shall be insulated as specified for hot water supply piping. In addition, continuous vapor barrier shall be maintained. Use of staples or tacks shall not be permitted. Double wrapping of fittings insulated with blanket insulation is not required. Insulation thickness shall be 1".



- F. Pipe hangers shall be outside insulation and shall incorporate 12", 26-gauge protection shields. Insulation on piping that passes through walls or partitions shall pass continuously through sleeves, except at fire walls, smoke partitions, and floor penetrations where space between sleeves and piping shall be firestopped with approved packing.

## 2.05 HANGERS, ANCHORS, CLAMPS AND INSERTS

- A. Provide adjustable clevis hangers for piping 3" and larger, and A band hangers for smaller piping. Support piping from building structure to maintain required grade and pitch of pipe lines, prevent vibration, secure piping in place, and provide for expansion and contraction. Secure hangers to inserts where practical. Hanger rods shall have machine threads.
- B. Provide vertical brackets and guides for pipe risers at each floor and where horizontal piping is racked along walls. Trapeze hangers may be used where conditions permit. Provide extended hangers for insulated piping with 12" long galvanized insulation shields. Hangers for copper piping shall be copper or bronze or shall be coated for dielectric isolation.
- C. Hanger rods shall be connected to beam clamp, UL-approved concrete inserts or Phillips or approved equal expansion shields. No ramset or shot shields will be allowed.
- D. Hanger spacing shall meet requirements of state and local plumbing codes. In no case shall horizontal piping be supported at intervals greater than 10'-0".
- E. Piping below basement or lowest level slab (that is, buried piping) need not be supported from structure if slab is not designed as structural slab.
- F. Pipe supports, vertical and horizontal, shall not bear on sleeves.
- G. Friction clamps shall be installed at base of plumbing risers and at each floor. Friction clamps shall not be supported from or rest on floor sleeves.
- H. Horizontal piping shall be suspended from building by mild steel rod connecting pipe hanger to inserts, beam clamps, angle brackets and lag screws as required by Building Construction in accordance with the following:

<u>Rod Size</u>	<u>Pipe Size</u>
3/8"	0" to 2"
1/2"	2-1/2" to 3-1/4"
5/8"	4" to 5"
3/4"	6"
7/8"	8" to 10"

- I. Hangers on insulated lines shall be sized to fit the outside diameter of pipe insulation. Provide pipe covering protection saddles at hangers on insulated lines.
- J. Piping at equipment shall be supported to prevent strains or distortions in connected equipment and control valves. Piping at equipment shall be supported to allow for removal of equipment, valves, and accessories with a minimum of dismantling and without requiring additional support after these items are removed.
- K. Piping installed under this Section shall be independently supported from building structure and not from piping, ductwork, conduit or other trades. Supplementary steel, including

factory-fabricated channels, required to meet the requirements specified herein, shall be provided by the Plumbing Contractor.

- L. Maximum spacing of hangers on waste pipe shall be 5' and hangers shall be provided at all changes in direction. Hanger rods to support piping from the structure or supplementary steel shall not exceed 4' in total length.

## 2.06 TRAPS AND STRAINERS

### A. Traps

- 1. Provide separate traps with integral cleanouts on fixtures and equipment that require connections to sanitary system, except:
  - a. on fixtures with integral traps, and
  - b. as shown on Drawings otherwise.
- 2. Traps exposed to view, including connecting drain lines, shall be chrome-plated. Traps shall be of sizes shown on Drawings but shall not be less than 1-1/2".

## 2.07 CLEANOUTS

- A. Provide cleanouts in soil, waste and storm drainage piping on straight runs, at changes in directions and at foot of stacks and other points where required by inspecting authorities. Cleanouts shall suit construction in which they are to be installed.
- B. Maximum horizontal distance on straight runs between cleanouts in piping 4" and smaller shall be 50 feet. In piping 5" and larger, maximum horizontal distance between cleanouts shall be 100 feet.
- C. Cleanouts shall be same size as pipe 4" and smaller. Cleanouts for piping larger than 4" shall be not less than 4" in diameter. No reduction in cleanout sizes for pipe 4" and smaller is permitted.
- D. Traps not integral with fixtures and in accessible locations shall have brass trap screw protected by water seal and will be regarded as cleanout.
- E. Bodies of cleanout ferrules in bell and spigot piping shall be standard pipe sizes conforming in thickness to that required for pipe and fittings and shall extend not less than 3/4" above hub of pipe.
  - 1. Cleanout plug shall be cast brass with raised nut 3/4" high.
  - 2. Cleanouts in copper waste piping shall be soldered brass cleanout fittings with extra heavy brass screw plugs of same size as line.
  - 3. Cleanouts in threaded waste piping shall be cast iron, drainage T pattern, 90-degree branch fitting with extra heavy brass screw plugs of same size as pipe.
  - 4. Floor cleanouts in finished areas shall be cast iron body and frame with round adjustable scoriated secured nickel bronze top, J.R. Smith No. 4023 or approved equal.
  - 5. Floor cleanouts in unfinished areas shall be cast iron body and frame with round adjustable scoriated secured cast iron top, J.R. smith No. 4220 or approved equal.
- F. Provide test tees with cleanout plugs at foot of vertical soil, waste, acid waste and roof conductor lines and at each floor. Cleanouts on vertical lines concealed behind finished walls shall extend to back of finish wall; provide wall plate. Obtain Architect's approval for wall plate locations and reroute piping if necessary.

- G. Cleanouts shall open in direction of flow of drainage line served or at right angles thereto.
- H. Keep cleanout plugs clean and unimpeded. Prevent covering with cement, plaster or other permanent finishing materials.

#### 2.08 WATER HAMMER ARRESTORS

- A. Provide water hammer arrestors at fixtures with automatic solenoid or cylinder operated valves, automatic flush valves or quick-closing valves.
- B. Fixtures and equipment in battery installation may use single water hammer arrestor properly sized for connected load.
- C. Provide proper access to water hammer arrestors.
- D. Water hammer arrestors shall be Josam No. 1485, J.R. Smith Series 5000 or Zurn 2-1700 Series.

#### 2.09 UNIONS, FLANGES AND DIELECTRIC COUPLINGS

- A. Unions: Provide union connections to fixtures and equipment such as hot water heaters. Union connections shall include unions, flanges, and compression fittings. Union connections on domestic water piping shall be bronze with minimum cold working pressure of 200 psi.
- B. Dielectric Couplings: When domestic water piping system comes in contact with ferrous pipe, fittings, valves and other components of domestic water system, connections shall be made with dielectric flanges. Contact between ferrous stud bolts and non-ferrous bronze flanges shall be electrically insulated with non-metallic washers.

#### 2.10 JOINTING COMPOUNDS

- A. Provide pipe dope, Teflon tape, wax rings, neoprene gaskets and other jointing compounds as required by best standard practice and only on service as recommended by manufacturer.
- B. Apply putties and jointing compounds for plumbing fixtures and trim as recommended by manufacturers.

#### 2.11 SLEEVES AND PENETRATIONS

- A. Pipe Sleeves
  1. Sleeves through floors and through structural and fire-rated construction shall be Schedule 40 steel.
  2. Sleeves through partitions and non-fire-rated construction shall be 26-gauge galvanized steel with lock longitudinal seams, or approved plastic pipe.
  3. Provide waterproofing membrane locking devices at floors. Provide 150 lb. slip-on welding flanges at exterior wall penetrations.
- B. Fire stop penetration seals in fire-rated construction shall be ceramic fiber (Proset Systems Firefill); mineral fiber (Manville Thermo-mat); or silicone foam (Dow RTV 3-6548). Provide mineral fiber board, matting or putty for damming and forming. Finish seals flush to wall surface and fill gaps with silicone adhesive sealant caulking (Dow 96-081 RTV or approved equal).
- C. Packing for sleeves that do not require maintenance of fire rating shall be oakum, silicate foam, ceramic fiber or mineral fiber with approved sealant. Pack or foam to within one inch of both wall

surfaces. Seal penetration packing with approved caulking and paintable water-proof mastic surface finish or silicone caulking.

D. Other Water-proof Pipe Penetrations

1. Modular mechanical penetration seals shall be interlocking synthetic rubber links shaped to fill annular space continuously, with galvanized carbon steel bolts, nuts and pressure plates to expand rubber seal between pipe and sleeve. Sleeve seal shall be water-tight.
2. Prefabricated modular sleeves shall be Mason Industries (SWS) or approved equal stiffened galvanized steel sleeves with preformed closed-cell elastomeric seal (non-fire-rated) or preformed mineral fiber or silicone foam seal (fire-rated).
3. Provide water-proof 1" single ring set in silicone and bolted to floor or wall at chipped and drilled penetrations.

2.12 VALVE TAGS

- A. Valve tags shall be engraved laminated plastic tags. Tags shall have black characters on white face, consecutively numbered and prefixed with letter P. Embossed or engraved aluminum or brass tags may be substituted if desired. Tags shall be at least 1/8" thick.
- B. Tags shall be at least 1" diameter with numerals at least 3/8" high and attached by s hooks or chains.

2.13 PIPE IDENTIFICATION

- A. Provide color-coded pipe identification markers on piping installed under this Section. Pipe markers shall be snap-on laminated plastic protected by clear acrylic coating. Pipe markers shall be applied after Architectural painting where such is required.
- B. In general, 2" high legend shall be used for pipe lines 4" diam. and larger, and 3/4" high legend shall be used for pipe lines 3" diameter and smaller.
- C. Markers shall be Seton, Setmark or approved equal.
- D. Color banding shall meet ANSI A13.1-1975 and OSHA requirements.
- E. Markers shall have legends and color coding with black letters:

<u>Service</u>	<u>Legend</u>	<u>Background Color</u>
Cold Water	Cold Water	Green
Hot Water	Hot Water	Green
Sanitary Waste	Sanitary Waste	Green
Sanitary Vent	Sanitary Vent	Green

2.14 ESCUTCHEONS

- A. Escutcheons shall be heavy cast brass, chromium-plated, adjustable, and shall be of sufficient outside diameter to cover sleeve opening and shall fit snugly around pipe.

PART 3 - EXECUTION

## 3.01 COMMISSIONING OF EQUIPMENT AND SYSTEMS

- A. The Engineer will check the completed installation either sequentially as different parts are completed, or when the entire installation is complete, at the sole option of the Architect.

## 3.02 SPECIAL RESPONSIBILITIES

- A. Coordination: Cooperate and coordinate with work of other Sections in executing work of this Section.
  - 1. Perform work so that progress of entire project including work of other Sections is not interfered with or delayed.
  - 2. Provide information as requested on items furnished under this Section which shall be installed under other Sections.
  - 3. Obtain detailed installation information from manufacturers of equipment provided under this Section.
  - 4. Obtain final roughing dimensions or other information as needed for complete installation of items furnished under other Sections or by Owner.
  - 5. Keep fully informed as to shape, size and position of openings for material or equipment to be provided under this and other Sections. Give full information so that openings required by work of this Section may be coordinated with other work and other openings and set sleeves in advance. In case of failure to provide sufficient information or set sleeves in proper time, provide cutting and patching to full satisfaction of Architect.
  - 6. Provide information as requested as to sizes, number and locations of concrete housekeeping pads necessary for equipment provided under this Section.
- B. Installation Only Items:
  - 1. Where this contractor is required to install items which it does not purchase, it shall coordinate their delivery and be responsible for their unloading from delivery vehicles and for their safe handling and field storage up to the time of installation. This trade shall be responsible for:
    - a. Any necessary field assembly and internal connections, as well as mounting in place of the items, including the purchase and installation of all dunnage supporting members and fastenings necessary to adapt them to architectural and structural.
    - b. Their connection to building systems including the purchase and installation of all terminating fittings necessary to adapt and connect them to the building systems.
- C. Maintenance of equipment and systems: Maintain equipment and systems until Final Acceptance. Ensure adequate protection of equipment and material during delivery, storage, installation and shutdown, and during delays pending final test of systems and equipment because of seasonal conditions.
- D. Use of premises: Restrict use of premises as directed by Architect and as required below.
  - 1. Remove dirt and debris and keep premises clean. Upon completion of work, remove equipment and unused material. Put building and premises in neat and clean condition and do cleaning and washing required to provide acceptable appearance and operation of equipment, to satisfaction of Architect and as specified under Cleaning Section 3.20.

2. It shall be this trade's responsibility to store his materials in a manner that will maintain an orderly clean appearance. If stored on-site in open or unprotected areas, all equipment and material shall be kept off the ground by means of pallets or racks and covered with tarpaulins.
3. Do not interfere with function of existing sewers and water and gas mains and prevent debris from entering piping. Do not disrupt water services or other utilities for testing and connection of new work to existing.

E. Fireproofing:

1. Clips, hangers, clamps, supports and other attachments to surfaces to be fireproofed shall be installed, insofar as possible, before start of spray fiber work.
2. Piping and equipment that interfere with proper application of fireproofing shall be installed after completion of spray fiber work.
3. Patch and repair spray fireproofing cut or damaged during course of work specified under this Section. Trade responsible for damage shall bear cost of repair.

F. Temporary water supply and sanitary facilities: Special reference is made to Division 1 requirements for temporary facilities.

### 3.03 MATERIALS AND WORKMANSHIP

- A. Work shall be neat and rectilinear. Piping shall run concealed except in mechanical rooms, stairways and areas without hung ceiling. Install material and equipment as recommended by manufacturer. Installation shall operate safely and without leakage. Work shall be properly and effectively protected, and pipe openings shall be temporarily closed to prevent obstruction and damage before completion.
- B. Except as specified otherwise, material and equipment shall be new. Provide supplies, appliances and connections necessary for complete and operational installation. Provide components required or recommended by OSHA and NFPA.
- C. References to manufacturers and catalog designations are intended to establish standards of quality for performance and materials but imply no further limitation of competitive bidding.
- D. Finish of materials, components and equipment shall be as approved by Architect and shall be resistant to corrosion and weather as necessary.

### 3.04 INSTALLATION OF EQUIPMENT

- A. Avoid interference with structure and with work of other Sections, to satisfaction of Architect, as required by codes and as necessary to meet manufacturer's installation and maintenance recommendations. Installation shall permit clearance for access to equipment for repair, servicing and replacement.
- B. Distribute equipment loads properly on building structural members provided for equipment support under other Sections. Install and support roof-mounted equipment on structural steel provided under other Sections.
- C. Provide hangers, supports, inserts, anchors, brackets, shelves, stands and legs as necessary for floor, wall or ceiling-mounted of equipment provided under this Section as shown on Drawings and as specified.

- D. Provide steel supports and hardware for proper installation of hangers, anchors, guides, and other components.
- E. Provide cuts, weights and other pertinent data required for proper coordination of equipment support provisions and installation.
- F. Structural steel and supporting and hanging hardware shall meet ASTM Standards; use of steel and hardware shall meet requirements of Section Five of Code of Practice of American Institute of Steel Construction.
- G. Verify site conditions and dimensions of equipment to ensure access for proper installation of equipment without disassembly that would affect warrantee. Report conditions that may prevent proper installation in writing before purchase or shipment of equipment.

### 3.05 ANCHORS AND INSERTS

- A. Inserts shall be iron or steel of type to receive machine bolt head or nut after installation. Inserts shall permit adjustment of bolt in one horizontal direction and shall develop strength of bolt when installed in properly cured concrete.
- B. Provide anchors as necessary for attachments of equipment supports and hangars.

### 3.06 PENETRATIONS AND SLEEVES

#### A. General

- 1. Provide pipe sleeves as specified and as shown on Drawings at penetrations of foundations, walls, slabs (except on-grade) partitions and floors. Sleeves shall meet NFPA-101 requirements and materials requirements of Part 2 of this Section.
- 2. Coordinate work carefully with architectural and structural work. Set sleeves in forms before concrete is poured. Provide core drilling as necessary to set sleeves if not set before concrete is poured, and to set sleeves in existing construction. Do not penetrate structural members without Architect's approval.
- 3. Sleeves for insulated pipe shall accommodate continuous insulation without compression.
- 4. Sleeves through floors shall be water-tight and shall extend two inches above floor surface.

#### B. Pipe Sleeves

- 1. Annular space between pipe or pipe insulation and sleeve shall be at least 1/4".
- 2. Sleeves are not required for slab-on-grade unless specified otherwise.
- 3. Sleeves through rated fire walls and smoke partitions shall maintain fire rating of construction penetrated.
- 4. Do not support piping risers on sleeves.

#### C. Installation, Testing, Listings and Approvals

- 1. Installation shall meet material manufacturer's recommendations exactly, particularly as regards preparation of surfaces, removal of foreign material safety requirements, ventilation and other installation details. Dam openings as recommended. Remove flammable materials used for damming and forming seals in fire-rated construction.
- 2. Sleeve penetration methods shall be water- and gas-tight and shall meet requirements of ASTM E-119 Standard Methods of Fire Tests of Building Construction and Materials.

3. Fire-stop penetration seal methods and materials shall be FM-approved and UL-listed as applicable.
4. Inspect foamed sealants to ensure that installations achieve manufacturer's optimum cell structure and color ranges.

### 3.07 ESCUTCHEONS

- A. Install escutcheons around exposed pipe passing through finished floor, wall, or ceiling. Escutcheons shall be heavy cast brass, chromium-plated, adjustable, and shall be of sufficient outside diameter to cover sleeve opening and shall fit snugly around pipe.

### 3.08 JOINTS AND CONNECTIONS

- A. Joints and connections shall be permanent and shall be gas- and water-tight. Jointing shall be type specified for service indicated. Joints and connections shall meet requirements of manufacturers best recommended practice. All transitions between different piping materials shall be made using approved adapters. Adapters for transitions between two types of piping materials shall be manufactured for purpose intended.

### 3.09 INTERIOR WATER SUPPLY SYSTEM

- A. Water supply piping shall be run as indicated on Drawings, including mains, supplies to fixtures and indicated equipment. Connections to fixtures shall be from top of mains, except as noted, and piping shall be pitched at least 1" in 40 feet so that it can be drained completely at low points with drain valves which shall be provided wherever necessary. Piping shall be pitched up toward fixtures for proper air relief. Provide automatic air vents with outlet piped to floor and gate valve ahead of air vents, where offsets cannot be vented by means of fixture connections.
- B. Provide water hammer arrestors of correct size and type at end of each water branch and main.
- C. Shut-off control valves on main distribution and branch lines shall be located for easy access and operation. Hot and cold water branches shall be valved with access panels provided as required at locations shown on Drawings and determined in field. Provide shut-off valves on branches to individual rooms.

### 3.10 INTERIOR WATER PIPING

- A. Provide a complete hot and cold water piping system to required areas as shown on Drawings and as specified.
  1. Pipe used in piping assembly shall be clean and shall have ends square and reamed before putting into fittings.
  2. Cut tube to required length with hacksaw or tube cutter designed for copper work.
  3. Remove burrs from inside and outside of cut edge and clean end of tube with steel wool or and cloth until discoloration is removed and metal is smooth and bright.
  4. Oxides shall be removed by sand cloth and brush.
  5. Removal of oxides or discoloration of pipe and fittings by acids or self-cleaning flux is forbidden.
  6. Apply a thin, uniform, and complete coating of reliable brand of soldering flux (Nokorode or Crest) to cleaned surfaces of tube and fittings.



7. When joints are soldered, remove excess solder with a cloth or brush leaving a fillet of solder in chamber at end of the fitting.
8. Piping must be true and plumb and with proper pitch for draining after soldering.
9. Lines of water piping shall be protected from water hammer by air chambers and shock absorbers. Where air chambers are used, extend branch piping upward at least 20 times the diameter of pipe. To install air chambers, pipe dropped into pipe spaces shall be carried full size as branches to fixtures with full size air chambers. Where shock absorbers (or shocks) are used, they shall be as manufactured by Josam, J.R. Smith, or Zurn, shall conform to the Plumbing and Drainage Institute published requirements.
10. Connections to tanks and equipment shall be made with unions.
11. Provide valves required to isolate sections of piping system extending into areas scheduled for construction at a later date. Provide draw-off valves required to properly chlorinate system in sections as required by phasing of the building. Identify isolation and phasing valves with valve tags and include same on charts and as-built drawings.

### 3.11 INTERIOR SANITARY WASTE, DRAINAGE AND VENT PIPING

- A. Provide waste drainage and vent lines as shown on Drawings. Vents shall extend through roof and shall increase to at least 4". Piping shall be assembled and installed without undue strains and stresses, and provision shall be made for expansion, contraction and structural settlement.
- B. Interior horizontal sanitary waste drainage piping shall be installed in practical alignment at uniform grade of at least 1/8" per foot but 1/4" per foot where possible, and as shown on Drawings.
- C. Vents from fixtures or line of fixtures, when connected to vent line serving other fixtures, shall be extended at least 6" above flood level rim of highest of fixtures to prevent use of vent line as waste. No vent terminal shall be directly beneath door, window or other ventilating opening of building, nor shall any vent be within 12 feet horizontally of such opening.
- D. Provide sleeves for pipe that passes under or through wall.
- E. Provide 3" air gap on equipment and drains that discharge to floor drains.
- F. Provide air gaps at least twice diameter of waste pipe between level of each supply opening (except outlets protected with vacuum breakers) and flood rim of fixture receptacle.
- G. Piping shall be run straight and plumb and offsets shall be made at an angle of no less than 45 degrees. Threaded joints shall be as specified above.
- H. Carefully lay out work in advance so pipes shall pass through opening and permit proper pitch to pipeline. Due to extensive system of ventilation and lighting systems coordinate work with work of other trades to avoid necessity of taking down work installed without prior checking.

### 3.12 CORE DRILLING

- A. Plumbing Contractor shall provide core drilling required for installation of plumbing systems if sleeves are not set before concrete is poured as follows:
  1. Subcontractor shall carry costs for core drilling.
  2. General Contractor shall not be responsible for any circular penetrations required for proper installation of plumbing systems.

3. Locate required openings and prior to coring, coordinate opening with General Contractor and other trades.
4. Do not disturb existing systems.
5. Thoroughly investigate existing conditions in vicinity of required opening prior to coring.
6. Subcontractor shall be responsible for damages to building and building systems from coring operations.

### 3.13 TESTING OF PIPING SYSTEMS

#### A. General

1. Piping systems shall be subjected to testing water or air as noted and shall hold tight at the pressure head stated for the time interval required without adding air or water. While any system is being tested, required head or pressure shall be maintained until joints are inspected.
2. Tests shall be witnessed by inspector having jurisdiction and the Architect with 48-hour notice given these authorities.
3. Equipment, material and labor required for testing of various systems or part thereof shall be provided by Plumbing Contractor.

#### B. Sanitary, (Gravity Systems)

1. Water test shall be applied to drainage systems either in their entirety or in sections as required, after rough piping has been installed.
2. If applied to entire system, openings in piping system shall be tightly closed, except the highest openings, and system filled with water to point of overflow.
3. If system is tested in sections, each opening shall be tightly closed except highest opening in the section under test, and each section shall be filled with water but no section shall be tested with less than 10' head of water.
4. In testing successive sections, at least upper 10' of next preceding section shall be tested so that no joint of piping in building, except the uppermost 10' of the system shall be submitted to a test of less than a 10' head of water.
5. Water shall be kept in system for at least 15 minutes before inspection starts; the system shall then be made tight at all points.

C. Points of drainage systems tested with air instead of water shall be tested by attaching an air compressor testing apparatus to suitable opening and, after closing all other inlets or outlets, forcing air into systems until a uniform gauge pressure of 5 psi of sufficient pressure to balance a column of mercury 10" high. Pressure shall be held without introduction of additional air for a period of at least 15 minutes.

D. Interior Water Piping System: Upon completion of water supply systems or section thereof, as required, system shall be tested and proved tight under a water pressure of 150 psi. Gauge shall be located on lowest new floor and pressure shall hold for a period of one hour without introducing additional water. Water used for testing shall be from a potable source of supply.

#### E. Testing Summary

1. W&V - with water to a 10 foot head for 15 minutes.
2. Water - with potable water to 150 psi for one hour.

F. Defective Work: If inspection or tests show defects, such defective work or material shall be replaced, and inspection and tests shall be repeated. Repairs to piping shall be made with new material. No caulking of screwed joints or holes shall be acceptable.

G. Additional Tests

1. Provide additional tests such as smoke pressure tests as required by regulations or as directed by authorities making the inspection.
2. Provide for any repeated test as directed by the Architect, to make all systems tight as required.
3. Visual inspections of joints and valves shall be made as directed by the Architect.

3.14 CLEANING

- A. Clean systems thoroughly before testing. Fixtures, equipment, pipe, valves and fittings shall be free of grease, metal, cuttings, dirt and other foreign material. Remove protective covers. Fixtures (including lavatories, water closets and urinals) shall be cleaned and ready for use. Final cleaning of fixtures to be performed by others.
- B. Repair stoppages, discoloration and damage to parts of building, finish and furnishings due to failure to properly clean piping system within Contract Price.
- C. After completion of project, clean the exterior surface of equipment included in this section, including concrete residue.

3.15 ACCESS AND ACCESS PANELS

- A. Provide access to material or equipment which may need inspection, replacement, repair or service and coordinate their delivery with the installing Trade. If proper access cannot be provided, confer with Architect as to best method of minimizing effect of reduced access which may result.
- B. Coordinate and prepare a location, size, and function schedule of access panels required to fully service equipment and deliver to a representative of the installing Trade.
- C. Furnish access panels, doors and hatches for installation under other Sections where shut-off valves, control valves, check valves and other items which are installed under this Section require access and are concealed in floor, wall, furred space or above ceiling. Access panels shall be by Milcor, Knapp, Inland Steel or approved equal; coordinate selection with other Sections.
- D. Lay-in and removable splined tile ceilings do not require access panels and each valve above ceiling shall have location marked with thumb tack on finished ceiling panel.
- E. Access panels shall have same fire rating classification as surface penetrated.
- F. Panels sizes to be determined as required. Panels will be supplied by the Plumbing Contractor and installed by others.

END OF SECTION

## SECTION 260000 - ELECTRICAL

### PART 1 – GENERAL

#### 1.1 GENERAL PROVISIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The work in this section is specified herein and generally shown on the following drawings: E000, ED201, ED301, ED401 E201, E301, E401.

#### 1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Lighting and lighting controls include RGB LED system.
  - 2. Electrical devices.
  - 3. Wiring and conduit
  - 4. Testing of all electrical systems.
  - 5. Modification of existing Fire Alarm System
  - 6. Core drilling, patching and sealing, including penetration fire stopping for the Work of this Section.
  - 7. Hoisting equipment for the Work of this Section.
  - 8. Demolition and disposal of electrical equipment.
- B. Alternates: Not Applicable.
- C. The Electrical Contractor shall be responsible for filing all documents, payment of all fees, and securing of all inspections and approvals necessary for the electrical work.

#### 1.3 SUBMITTALS

- A. Comply with requirements specified in Section 013300 – SUBMITTAL REQUIREMENTS.
- B. Shop Drawing: Submittals shall include but not be limited to:
  - 1. Lighting and lighting control.
  - 2. Devices and equipment
  - 3. Transformers
  - 4. Wiring and cables.

#### 1.4 REFERENCES

- A. Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any electrical item in the drawings or specifications for

electrical work carries with it the instruction to furnish, install and connect the item as part of the electrical work, regardless of whether or not this instruction is explicitly stated.

- B. It shall be understood that the specifications and drawings for electrical work are complimentary and are to be taken together for a complete interpretation of the electrical work except that indications on the drawings, which refer to an individual element of work, take precedence over the specifications where they conflict with same.

#### 1.5 REGULATORY REQUIREMENTS

- A. Comply with all applicable federal and state laws, and all local codes, by-laws and ordinances. Give necessary notices, obtain permits and pay government, city, town, and state sales taxes, fees, and other costs in connection with work, file necessary approvals of departments having jurisdiction, obtain required certificates of inspection for work. Contractor shall pay particular attention to permitting requirements for:
  - 1. Narragansett Fire Department permits
- B. Where provisions of the Contract Documents conflict with any codes, rules or regulations, the latter shall govern. Where the contract requirements are in excess of applicable codes, rules or regulations, the contract provisions shall govern unless the Designer rules otherwise.
- C. Request inspections from authorities having jurisdiction, obtain all permits and pay for all fees and inspection certificates as applicable and/or required. All permits and certificates shall be turned over to the owner's Project Manager at the completion of the work. Copies of permits shall be given to the resident engineer prior to the start of work.
- D. Unless otherwise specified or indicated, materials and workmanship and equipment performance shall conform with the latest edition of the following standards, codes, specifications, requirements and regulations:
  - 1. Rhode Island State Building Code SBC-1
  - 2. Rhode Island State Electrical Code SBC-5
  - 3. Rhode Island Fire Safety Code
  - 4. National Fire Protection Association (NFPA) 70 & 110
  - 5. Local Town Regulations and By-laws
  - 6. Underwriter's Laboratories, Inc. (UL)
  - 7. National Electrical Manufacturer's Association (NEMA)
  - 8. American National Standards Institute (ANSI)
- E. All electrical work shall meet or exceed any other state and local codes and/or authorities having jurisdiction including all other standards indicated herein.

#### 1.6 COORDINATION

- A. Electrical Drawings are diagrammatic. They do not show all offsets required for coordination nor do they show the exact routings and locations needed to coordinate with structure and other trades and to meet architectural requirements. Electrical conduit routings indicated on the

drawings are shown for general routing and do not show all junction boxes, elbows, couplings as necessary.

- B. Work shall be performed in cooperation with other trades on the project and so scheduled as to allow speedy and efficient completion of the work.
- C. Furnish to other trades advance information on locations and sizes of all frames, boxes, sleeves and openings needed for their work, and also furnish information and shop drawings necessary to permit trades affected by the work to install same properly and without delay.
- D. In all spaces, prior to installation of visible material and equipment, including access panels, review Drawings for exact locations and where not definitely indicated, request information from Designer. Without extra cost to the owner, make reasonable modifications to the work as required by normal structural interferences. All piping, duct, conduit, and associated components to be as tight to underside of structure as possible.
- E. If any electrical work has been installed before coordination with other trades so as to cause interference with the work of such trades, all necessary adjustments and corrections shall be made by the electrical trades involved without extra cost to the owner.
- F. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Designer for review and approval.
- G. Protect all materials and work of other trades from damage which may be caused by the electrical work, and repair all damages without extra cost to the owner.

#### 1.7 INSTALLATION REQUIREMENTS

- A. The arrangement of all electrical work shown on the drawings is diagrammatic only and indicates the minimum requirements of the work. Conditions at the building including actual measurements shall determine the details of the installation. All work shall be laid out and installed so as to require the least amount of cutting and patching.
- B. Check the architectural plans and specifications before ordering any material and equipment. Any discrepancies shall be brought to the attention of the Designer for his determination prior to proceeding with the work.

#### 1.8 TYPICAL DETAILS

- A. Typical details where shown on the drawings shall apply to each and every item of the project where such items are applicable. They are not repeated in full on the drawings, which in many cases are diagrammatic only, but with the intention that such details shall be incorporated in full. Any alternate method proposed for use by the Contractor shall have the prior approval of the Designer.

## 1.9 SLEEVES, INSERTS

- A. Furnish and install all sleeves, inserts, anchor bolts and similar items to be set into masonry or concrete, as required for mechanical and electrical work. Internal diameter of sleeve shall be 2" larger than the outside diameter of the pipe or insulation covered line passing through it.

## 1.10 CORING, DRILLING

- A. Core, cut and/or drill all holes in walls and floors required for the installation of sleeves and supports for the electrical work.

## 1.11 ACCESSIBILITY

- A. Install all work such that parts requiring periodic inspection, operation, maintenance and repair are readily accessible.
- B. Furnish all access panels appropriate to particular conditions, to be installed by trades having responsibility for the construction of actual walls, floors or ceilings at required locations.

## 1.12 SUPPLEMENTARY SUPPORTING STEEL

- A. Provide all supplementary steelwork required for mounting or supporting equipment and materials.
- B. Steelwork shall be firmly connected to building construction as required.
- C. Steelwork shall be of sufficient strength to allow only minimum deflection in conformity with manufacturer's published requirements.
- D. All supplementary steelwork shall be installed in a neat and workmanlike manner parallel to floor, wall and ceiling construction; all turns shall be made at forty-five and ninety°, and/or as dictated by construction and installation conditions.
- E. All manufactured steel parts and fittings shall be galvanized.

## 1.13 TOOLS AND EQUIPMENT

- A. Provide all tools and equipment required for the fabrication and installation of the mechanical and electrical equipment at the site.

## 1.14 PORTABLE AND DETACHABLE PARTS

- A. Contractors shall retain in their possession all portable and/or detachable parts and portions of materials, devices, equipment etc. necessary for the proper operation and maintenance of the mechanical and electrical systems until final completion of the work, at which time they shall be handed over to the owner's Project Manager.

#### 1.15 RECORD DRAWINGS, PROJECT CLOSEOUT

- A. Comply with requirements specified in Section 017700 – CONTRACT CLOSEOUT.
- B. This trade shall submit the record set for approval by the fire and building departments in a form acceptable to the departments, when required by the jurisdiction.
- C. Drawings shall show record condition of details, sections, riser diagrams, control changes and corrections to schedules. Schedules shall show actual manufacturer and make and model numbers of final equipment installation.

#### 1.16 WARRANTY

- A. Provide a factory warranty for the generator and automatic transfer switches for ten (10) years following the date of Substantial Completion. All other work of this Section shall be provided a warranty of one year following the date of Substantial Completion. Provide written warrantee statements. The warrantee shall repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Designer's satisfaction and correct damage caused in making necessary repairs and replacements under warranty within Contract Price.

#### 1.17 OPERATING, INSTRUCTION AND MAINTENANCE MANUALS

- A. Refer to SECTION 017700 - CONTRACT CLOSEOUT for submittal procedures pertaining to operating and maintenance manuals.

#### 1.18 QUALITY ASSURANCE

- A. The requirements of the State Building Code and local regulations establish the minimum acceptable quality of workmanship and materials, and all work shall conform thereto unless more stringent requirements are indicated or specified herein.
- B. All work shall comply with the latest editions of the codes as referenced herein.
- C. Follow manufacturer's directions for articles furnished, in addition to directions shown on drawings or specified herein.
- D. Protect all work, materials, and equipment from damage during process of work. Replace all damaged or defective work, materials and equipment without additional cost to the owner.
- E. All equipment and materials for permanent installation shall be the products of recognized manufacturers and shall be new.



- F. Equipment and materials shall:
1. Where normally subject to Underwriters Laboratory Inc. listing or labeling services, be so listed or labeled.
  2. Be without blemish or defect.
  3. Not be used for temporary light and power purposes.
  4. Be in accordance with the latest applicable NEMA standards.
  5. Be products which will meet with the acceptance of all authorities having jurisdiction over the work. Where such acceptance is contingent upon having the products examined, tested and certified by Underwriters or other recognized testing laboratory, the product shall be so examined, tested and certified.
- G. Except for conduit, conduit fittings, outlet boxes, wire and cable, all items of equipment or material of one generic type shall be the product of one manufacturer throughout.
- H. For items which are to be installed but not purchased as part of the electrical work, the electrical work shall include:
1. The coordination of their delivery.
  2. Their unloading from delivery trucks driven into any point on the property line at grade level.
  3. Their safe handling and field storage up to the time of permanent placement in the project.
  4. The correction of any damage, defacement or corrosion to which they may have been subjected. Replacement if necessary shall be coordinated with Contractor who originally purchased the item.
  5. Their field make up and internal wiring as may be necessary for their proper operation.
  6. Their mounting in place including the purchase and installation of all dunnage, supporting members, and fastenings necessary to adapt them to architectural and structural conditions.
  7. Their connection to building wiring including the purchase and installation of all termination junction boxes necessary to adapt and connect them to this wiring. Included also shall be the purchase and installation of any substitute lugs or other wiring terminations as may be necessary to adapt their terminals to the building wiring as called for and to the connection methods set forth in these specifications.
- I. Items which are to be installed but not purchased as part of the electric work shall be carefully examined upon delivery to the project. Claims that any of these items have been received in such condition that their installation will require procedures beyond the reasonable scope of the electric work will be considered only if presented in writing within one week of the date of delivery to the project of the items in question. The electric work includes all procedures, regardless of how extensive, necessary to put into satisfactory operation, all items for which no claims have been submitted as outlined above.

#### 1.20 DELIVERY, STORAGE AND HANDLING

- A. All materials for the work of this section shall be delivered, stored and handled so as to preclude damage of any nature. Manufactured materials shall be delivered and stored in their original containers, plainly marked with the products' and manufacturer's name. Materials in broken

containers or in packages showing watermarks or other evidence of damage, shall not be used and shall be removed from the site.

#### 1.21 PHASING, DEMOLITION AND MAINTAINING EXISTING SERVICES

- A. Generator power shall be provided to the building at all times. Submit phasing plan for approval.
- B. During the execution of the work, required relocation, etc., of existing equipment and systems in the existing building areas where new work is to be installed or new connections are scheduled to be made, shall be performed by the Electrical contractor, as required by job conditions and as determined by the Designer in the field, to facilitate the installation of the new system, while demolition, relocation work or new tie ins will be performed. Outages required for construction purposes shall be scheduled for the shortest practical periods of time, in coordination with the User Agency's designated representative, for specified, mutually agreeable periods of time, after each of which the interruption shall cease and the service shall be restored. This procedure shall be repeated to suit the User Agency's working schedule, as many times as required until all work is completed. Any outages of service shall be approved by the owner's Project Manager, prior to commencing the work. No outages or shutdowns of service shall occur without the written authorization of the owner's Project Manager prior to commencing the work. Give notice of any scheduled shutdowns, a minimum of two weeks in advance. Shutdowns shall be performed on weekends or as described in Division 1. User Agency shall make their best efforts to meet this request without adversely affecting the electric service to the existing building.
- C. Prior to any deactivation and relocation or demolition work, consult the drawings and arrange a conference with the Designer and the the owner's Project Manager in the field to inspect each of the items to be deactivated, removed or relocated. Care shall be taken to protect all equipment designated to be relocated and reused or to remain in operation and be integrated with the new systems.
- D. All deactivation, relocation and temporary tie ins of electrical systems and equipment shall be provided by the Electrical Subcontractor. All demolition and removal of electrical systems and equipment designed to be demolished shall be provided by the Electrical contractor. Place all demolished electrical materials except hazardous materials (PCB lighting ballasts, fluorescent lamps, etc.) As determined by the Authority having jurisdiction in Construction Managers provided dumpster. All hazardous electrical materials shall be legally disposed by the electrical subcontractor.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Product specifications are written in such a manner so as to specify what materials may be used in a particular location or application and therefore do not indicate what is not acceptable or

suitable for a particular location or application. As an example: non-metallic sheathed cable is not specified; therefore, it is not acceptable.

- B. For purpose of establishing a standard of quality and not for purpose of limiting competition, the basis of this Specification is upon specified models and types of equipment and materials, as manufactured by specified manufacturers.
- C. In all cases, standard cataloged materials and systems have been selected. Materials such as lighting fixtures specially manufactured for this particular project and not part of a manufacturers standard product line will not be acceptable. In the case of systems, the system components shall be from a single source regularly engaged in supplying such systems. A proposed system made up of a collection of various manufacturers products will be unacceptable.

## 2.2 RACEWAYS AND FITTINGS

### A. Raceways - General:

- 1. No raceway shall be used smaller than 3/4" diameter. No conduit shall have more than three (3) 90° bends in any one run, and where necessary, pull boxes shall be provided. Intermediate metal conduit is not allowed.
- 2. Thin wall conduit electric metallic tubing (EMT) shall be installed in accordance with, Article 346 of NFPA 70 shall be zinc coated steel, conforming to industry standards. All wiring shall be in EMT unless otherwise noted.
- 5. Flexible metal conduit shall be used for connections to recessed lighting fixtures and motors. Liquid tight flexible metal conduit shall be used for the above connections which are located in moist locations. All flexible connections shall include a grounding conductor.
- 7. Fittings:
  - a. Provide insulated bushings on all raceways 1 inch diameter or larger.
  - b. Manufacturer's standard fittings shall be used for raceway supports.
  - c. Expansion Fittings: Expansion fittings shall be used where structural and concrete expansion joints occur and shall include a ground strap.
  - d. Threadless fittings for EMT shall be watertight compression type. Set-screw type fittings are not acceptable. All fittings shall be concrete tight. No diecast fittings allowed except for raceways larger than 1 inch diameter.
  - f. Cable supports in vertical raceways shall be of the split wedge type. Armored cable supports for vertical runs to be of wire mesh basket design.
  - g. Wall entrance seals shall be equal to O.Z. Gedney type "WSK".
  - h. Couplings, elbows and other fittings used with rigid nonmetallic raceways shall be of the solvent cemented type to secure a waterproof installation.

## 2.3 WIRING MATERIALS

- A. Building Wire and Cable shall be copper with 600V insulation, THWN for indoor circuitry. All wiring shall be in EMT unless otherwise noted.

- B. Conductors shall be of soft drawn 98% minimum conductivity properly refined copper, solid construction where No. 10 AWG and smaller, stranded construction where No. 8 AWG and larger.
- C. Final connections to motors shall be made with 18" of neoprene sheathed flexible conduit.
- D. Minimum branch circuit conductor size shall be No. 12 AWG installed in conduit. Motor control circuit wiring shall be minimum No. 14 AWG installed in conduit.
- E. Fire alarm and security system wiring shall be No. 16 twisted non-shielded pairs for alarm and trouble circuits and a minimum of #14 AWG for device power, control and alarm annunciation circuits.
- F. Metal Clad sheathed cable NFPA 70, type MC may be used for branch circuitry where run concealed in stud walls. All conductors shall be copper. All type MC cable insulation used shall have voltage rating of 600 volts, shall have a temperature rating of 75° C. and shall be thermoplastic material. Armor material shall be steel and armor design shall be interlocked metal tape.
- K. Control/Low Voltage Conductors: All control conductors shall be copper. Coordinate exact requirements with equipment being controlled
  - 1. Colors:
    - a. 24VDC System:
      - 1) Black: V-
      - 2) Red: V+
    - b. 24VDC RGBW 5-Wire System:
      - 1) Black: V+
      - 2) Red: Red
      - 3) Green: Green
      - 4) Blue: Blue
      - 5) White: White

#### 2.4 OUTLET, JUNCTION, PULL BOXES, AND WIRING TROUGHS FOR ALL SYSTEMS

- A. Outlets:
  - 1. Each outlet in wiring or raceway systems shall be provided with an outlet box to suit conditions encountered. Boxes installed in normally wet locations shall be of cast-metal type having hubs. Concealed boxes shall be cadmium plated or zinc coated sheet metal type. Old work boxes with Madison clamps not allowed in new construction.
  - 2. Each box shall have sufficient volume to accommodate number of conductors in accordance with requirements of NFPA 70. Boxes shall not be less than 1-1/2" deep unless shallower boxes are required by structural conditions and are specifically approved by Designer. Ceiling and bracket outlet boxes shall not be less than 4" octagonal except that smaller boxes may be used where required by particular fixture to be installed. Flush or recessed fixtures shall be provided with separate junction boxes when required by fixture terminal temperature requirements. Switch and receptacle boxes shall be 4" square or of comparable volume.

- B. Pull and Junction Boxes: Where necessary to terminate, tap off, or redirect multiple raceway runs or to facilitate conductor installation, furnish, and install appropriately designed boxes. Boxes shall be fabricated from code gauge steel assembled with corrosion resistant machine screws. Box size shall be as required by Code. Where intermediate cable supports are necessary because of box dimensions, provide insulated removable core brackets to support conductors. Junction boxes are to be equipped with barriers to separate circuits. Where splices are to be made, boxes shall be large enough to provide ample work space. All conductors in boxes are to be clearly tagged to indicate characteristics. Boxes shall be supported independently of raceways. Junction boxes in moist or wet areas shall be galvanized type. Boxes larger than 4 inches square shall have hinged covers. Boxes larger than 12 inches in one dimension will be allowed to have screw fastened covers, if a hinged cover would not be capable of being opened a full 90° due to installation location.

## 2.5 GROUNDING REQUIREMENTS

- A. Ground all systems and equipment in accordance with best industry practice, the requirements of NFPA 70 and the following:
- B. Provide grounding bonds between all metallic conduits of the light and power system which enter and leave cable chambers or other non metallic cable pulling and splicing boxes. Accomplish this by equipping the conduits with bushings of the grounding type individually cross connected.
- C. Bond metallic conduits containing grounding electrode conductors and main bonding conductors to the ground bus service enclosure and/or grounding electrode at both ends of each run utilizing grounding bushings and jumpers.
- D. Provide supplementary ground bonding where metallic conduits terminate at metal clad equipment (or at the metal pull box of equipment) for which a ground bus is specified. Accomplish this by equipping the conduits with bushings of the grounding type connected individually by means of jumpers to the ground bus. Exclude the jumpers where directed. This exclusion will be required where an isolated ground for electronic equipment is to be maintained.
- E. Each grounding type bushing shall have the maximum ground wire accommodation available in standard manufacture for the particular conduit size. Connection to bushing shall be with wire of this maximum size.

## 2.6 PHASING AND COLOR CODING

- A. The insulation or covering of each wire or cable shall be color coded so as to provide for circuit identification as specified below.

<u>120/208 V Circuits</u>	<u>Phase Circuits</u>
Black	A
Red	B

Blue	C
White	Neutral
Green	Equipment Ground

- B. Color coding shall be achieved by one of the following methods:
1. The insulation or covering shall be coded during manufacture by use of Colored compounds or Colored coatings.
- C. In sizes and insulation types where factory applied colors are not available, wires and cables shall be color coded by the application of colored plastic tapes in overlapping turns at all terminal points, and in all boxes in which splices are made.
- D. The same colored cable shall be connected to the same phase throughout the project.
- E. In general, building load centers and panelboards shall be phased "A", "B", "C", left to right. The neutral, although it may be in different locations for different equipment, shall be identified.

## 2.7 WIRING DEVICES

- A. Provide wiring device type plates for all wall mounted devices. All wall plates shall be smooth high impact nylon for all public areas, offices, classrooms, etc color as directed by the Designer. Provide galvanized steel for all Utility, Electric and Mechanical Rooms.
- B. Wiring devices standard for the project (i.e., with no specific type indicated) shall conform to the following:
1. Visible part colors of wiring devices shall be as directed by the Designer for all public areas, offices, classrooms etc. Provide brown devices for all Utility, Electrical and Mechanical Rooms.
  2. Exclude compact or "despard" type devices.
- C. Standard duplex convenience receptacles shall be 125 volt, 20 amps, three wire (two circuit wires plus ground), "U bar" ground NEMA slot configuration 5 20R, specification grade with a one-piece ground assembly. Receptacles shall be mounted 18" to center line above finished floor unless noted otherwise.
1. Equal to Hubbell No. HBL5362.
  2. Where indicated on plans provide receptacles with ground fault current interrupters, UL class A, 20A, 125V to be equal to Hubbell No. GF5352.
- D. Wiring device switches shall be toggle type, A.C. specification grade, 20 amps on 120 volt circuits. Switches shall be mounted 48" to center line above finished floor unless noted otherwise.
1. Single pole switch shall be equal to Hubbell No. HBL1221.
  2. Three-way switch shall be equal to Hubbell No. HBL1223.
  3. Single pole pilot light switch shall be equal to Hubbell No. HBL1221PL.

4. Equivalent 277 volt 20 amp switches shall be used where required.
- E. Nonstandard convenience receptacles and special purpose power supply receptacles shall be as listed on plans.
- F. Devices and device plates for flush wall devices which are not integrally equipped with same, shall be as directed by the Designer.
- G. For unfinished spaces, plates for surface mounted wall devices which are not integrally equipped with same, shall be galvanized sheet steel, formed raised type which does not overlap box. Where for switches, such plates shall have toggle guards.
- H. Where more than one wiring device is indicated in the same location, the devices shall be mounted in gangs under a common wall plate.
- I. Mount duplex convenience and power receptacles vertically with grounding posts at top of device unless otherwise indicated. Locate grounding post to left when horizontal mounting is indicated.
- J. Wiring devices and associated hardware shall be manufactured by Arrow Hart, Leviton, or Pass and Seymour.

## 2.8 CEILING FAN

- A. 52", 5 blade, 4515 cfm at high speed, 13 degree blade pitch Provide with wall speed controller and swivel pendant hanger box. Equal to Emerson Atomical.

## 2.9 PANELBOARDS

- A. Bus bars for their mains shall be of copper having current capacities as indicated and sized for such capacities in accordance with Underwriter Laboratory standards. Bus bar taps for panels with single pole branches shall be arranged for sequence phasing of the branch circuit devices. Bussing shall be braced throughout to conform to industry standard practice governing short circuit stresses in panelboards. Phase bussing shall be full height without reduction.
- C. A ground bus shall be provided for each panel. Each ground bus shall be of the same material as the phase and neutral buses.
- D. Cabinets shall be fabricated from industry standard gauge galvanized sheet steel with corners lapped and riveted, or fastened by approved methods. Door-in-door construction.
- E. The inside and outside of the trims shall be factory painted with one rustproofing primer coat and one finish coat. The finish paint shall be of a type to which field applied paint will bond. All trims shall be hinged.
- F. Cabinets and trims shall be suitable for the required mounting. Trims shall be fastened to cabinets and shall be of a type that are self supporting on cabinets. Trims for flush panels shall

overlap cabinets by at least 3/4" all around. Where two section panels are required, cabinets shall be of equal height including those cases where there is one main for both sections.

- G. Cabinets and trims for lighting and appliance panels shall accommodate and conform to the following limiting dimensions:
1. Minimum wiring gutter width on each side: 5 3/4".
  2. Maximum overall width: 24".
  3. Maximum overall depth: 6".
- H. Where wires or cables are used within panelboards to make up internal connections (factory installed or otherwise) such wire or cable shall have copper conductors only.
- I. Any cabinet for a power or distribution panel shall (regardless of the actual devices required to be in it) have a width, depth and bussing adequate for a three pole branch device equal in rating to the panel mains. In no case shall the cabinet be wider than 42 inches or deeper than 18 inches.
- J. Hinged doors covering all switching device handles shall be included in all panel trims.
- K. Doors in panelboard trims shall conform to the following:
1. In making switching device handles accessible, doors shall not uncover any live parts.
  2. Doors shall have flush type paracentric cylinder locks and catches. Two keys shall be supplied for each lock and each key shall open all panelboards. Locks and keys shall conform to a "standard keying policy" as directed.
- L. Where "spaces only" for overcurrent protection and switching devices are called for in a panel, its main bus, and backpan, as well as its cabinet and trim, shall be extended to accommodate these spaces and shall include all necessary hardware including bus connectors to add future devices.
- M. Panelboards shall comply with the following industry standards:
1. UL Standards: Panelboards: UL67 Cabinet & Boxes: UL50
  2. NEMA Standard: PB1
- N. Panelboards shall be labeled with a UL short circuit rating adequate for the available short circuit and based on the lowest panel mounted circuit breaker available UL listed interrupting current rating, but in no case less than 22 kaic for 240 volt panelboards.
- O. Provide "lock on" clips for the toggle handles of certain branches serving the Fire Alarm System, security, etc.
- P. Panelboards shall be manufactured by General Electric, Cutler Hammer or Square D.

## 2.10 MOLDED CASE CIRCUIT BREAKERS

- A. Molded case type circuit breakers shall consist of manually operated quick make quick break mechanically trip free operating mechanisms for simultaneous operation of all poles, with



contacts, arc interrupters and trip elements for each pole, all enclosed in molded phenolic plastic cases.

1. Their tripping units shall be of the "thermal magnetic" type having bimetallic elements for time delay overload protection and magnetic elements for short circuit protection.
2. They shall be manually operable by means of toggle type operating handles having "tripped" position midway between the "on off" position.
3. They shall each be contained in an individual case enclosing only the number of poles required for the particular breaker.
4. They shall be of the "bolted in" type.
5. Where necessary, to accommodate other requirements, their frame sizes shall be increased to conform to such requirements, frame sizes being indicated only as a reference to the minimum acceptable interrupting ratings noted above.
6. Where single pole in trip sizes 20 amps or less, they shall be rated for switching duty.
7. They shall be equipped with 5 milliamp sensitivity ground fault interrupting features where so indicated.

B. They shall be manufactured by Square D, Cutler Hammer, or General Electric.

## 2.11 MODIFICATIONS TO EXISTING FIRE ALARM SYSTEM

A. The existing system is a zoned hardwired system by FCI. The project shall include the removal of the existing zoned control panel and providing a new zoned fire alarm control panel. The new fire alarm control panel shall be UL listed for use with the existing fire alarm devices.

B. Fire Alarm Control Panel

1. Modular, power-limited design with electronic modules, UL 864 listed.
2. Alphanumeric Display and System Controls: Display alarm, supervisory, and component status messages and the programming and control menu. Liquid-crystal type, one line of 40 characters, minimum.
3. Circuits: No Fewer Than 4 Initiating Device Circuits: Four circuits, NFPA 72, Class A.
4. No Fewer Than two Notification Appliance Circuits: NFPA 72, Class B, Style Y.
5. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station via existing municipal master box. Also, provide a digital communicator for transmission to a central monitor service.
6. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals, supervisory and digital alarm communicator transmitters, shall be powered by the 24-V dc source.
7. Alarm current draw of the entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
8. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch. Batteries shall be Sealed lead calcium.

C. Combination Horn / Strobe:

1. Wall mounted flush or semi-flush.
2. Non-coded audible output of 90 dB minimum at 10 feet (3 meters).
3. Integrally mounted flashing light unit with block letters 'FIRE.' Minimum light intensity of 15 candela and flash rate between one and three Hertz.
4. Listed under UL Standards 464 and 1971.

- D. Strobe Only:
  - 1. Wall mounted flush or semi-flush.
  - 2. Integrally mounted flashing light unit with block letters 'FIRE.' Adjustable light intensity of 15-110 candela and flash rate between one and three Hertz.
  - 3. Listed under UL Standard 1971.
- E. Smoke Detectors:
  - 1. Photoelectric type.
  - 2. Listed under UL Standard 268.
  - 3. Provide visual indication of alarm on unit.
- F. Wiring: All new fire alarm wiring shall be FPLP in in EMT.
- G. Provide the service of a factory authorized technician to tie-in and test all devices in accordance with NFPA 72. Arrange for the presence of Narragansett Fire Department and URI for final testing and acceptance.

## 2.11 LIGHTING

- A. Refer to the lighting fixture schedule and lighting details on the drawings.

## PART 3 EXECUTION

### 3.1 BASIC REQUIREMENTS

- A. Adhere to best industry practice and the following.
- D. Equip each raceway intended for the future installation of wire or cable with a nylon pulling cord 3/16 inch in diameter and clearly identify both ends of the raceway.
- E. Provide all outlet boxes, junction boxes, and pull boxes for proper wire pulling and device installation. Include those omitted from the drawings due to symbolic methods of notation.
- F. Utilize lugs of the limiter type to make connections at both ends of cables installed on the line side of main service overcurrent and switching devices. Provide cable limiters for each end of each service entrance cable.
- G. Provide all sleeves through fireproof and waterproof slabs, walls, etc. required for electric work.
  - 1. Provide waterproof sealing for the sleeves through waterproof slabs, walls, etc.
  - 2. Provide fireproof sealing for the sleeves through fireproof walls, slabs, etc.
  - 3. Provide fireproof sealing for the openings in fireproof walls, slabs, etc., resulting from removal of existing electrical sleeves, conduits, poke-throughs, etc.
  - 4. Assume all penetrations through flooring will require fireproof sealing
  - 5. All fireproof sealing shall be FM approved.
- I. No splicing of wires will be permitted in Fire Alarm System.

- J. Bundle wiring passing through pull boxes and panel boards in a neat and orderly manner with plastic cable ties. Cable ties shall be Ty-Raps as manufactured by Thomas & Betts, Holub Industries Inc., Quick Wrap, Bundy Unirap or equal.
- K. Turn branch circuits and auxiliary system wiring out of wiring gutters at 90° to circuit breakers and terminal lugs.

### 3.2 WIRING METHODS

- A. The building is predominantly masonry wall construction with concrete floor slabs with lay-in tile ceilings.
- B. All conduit routed on exterior of building shall be rigid galvanized steel
- C. Interior panelboard and main feeders shall be run in EMT. EMT shall be used where conduit is run exposed inside the building, including electrical and mechanical rooms. Branch circuiting above lay-in ceilings may utilize MC cabling, but all home runs shall be in conduit.

### 3.3 TESTING REQUIREMENTS AND INSTRUCTIONS

- A. The Electrical contractor shall provide supervision, labor, materials, tools, test instruments and all other equipment or services and expenses required to test, adjust, set, calibrate, and operationally check work and components of the electrical systems and circuitry throughout the work.
- B. The Electrical contractor shall pay for all tests specified in this Section, including expenses incident to retests occasioned by defects and failures of equipment to meet specifications, at no additional cost to the owner. Any defects or deficiencies discovered in any of the electrical work shall be corrected.
- C. The Electrical contractor shall:
  - 1. Replace wiring and equipment found defective (defined as failing to meet specified requirements) at no additional cost to the owner.
  - 2. Submit three copies of test results to the engineer.
- D. Do not void equipment warranties or guarantees by testing and checkout work. Checks and tests shall be supplemental to and compatible with the manufacturer's installation instructions. Where deviations are apparent, obtain the manufacturer's approved review of procedure prior to testing. Where any repairs, modifications, adjustments, tests or checks are to be made, the Contractor shall contact the engineer to determine if the work should be performed by or with the manufacturer's representative.
  - 1. All checks and tests specified for proper operating and safety of equipment and personnel are to be performed concurrent with progression of the work, prior to Final Acceptance by the owner.
- E. Test are to:
  - 1. Provide initial equipment/system acceptance.

2. Provide recorded data for future routine maintenance and trouble shooting.
  3. Provide assurance that each system component is installed satisfactorily and can be expected to perform, and continue to perform, its specified function with reasonable reliability throughout the life of the facility.
- F. At any stage of construction and when observed, any electrical equipment or system determined to be damaged, or faulty, is to be reported to the engineer. Corrective action by the Contractor requires prior engineer approval, retesting, and inspection.
- G. Prior to testing and start-up, equipment and wiring shall be properly and permanently identified with nameplates, and other identification as specified in this Section. Check and tighten terminals and connection points, remove shipping blocks and thoroughly clean equipment, repair damaged or scratched finishes, inspect for broken and missing parts and review and collect manufacturer's drawings and instructions for delivery to the engineer. Make routine checks and tests as the job progresses to ensure that wiring and equipment is properly installed.
- H. Testing and checkout work is to be performed with fully qualified personnel skilled in the particular tests being conducted. Personnel are to have at least five years of experience with tests of same type and size as specified:
- I. Inspections and tests shall be in accordance with the following applicable codes and standards as amended to date, unless otherwise specified.
1. National Electrical Manufacturer's Association - NEMA.
  2. American Society for Testing and Materials - ASTM.
  3. Institute of Electrical and Electronic Engineers -IEEE.
  4. National Electrical Testing Association - NETA.
  5. American National Standards Institute - ANSI.
    - a. C2: National Electrical Safety Code.
    - b. Z244-1: American National Standard for Personnel Protection.
  6. Insulated Cable Engineers Association - ICEA.
  7. Association of Edison Illuminating Companies - AEIC.
  8. Occupational Safety and health Administration.
    - a. OSHA Part 1910; Subpart S, 1910.308.
    - b. OSHA Part 1926; Subpart V, 1926.950 through 1926.960.
  9. National Fire Protection Association - NFPA.
    - a. 70B: Electrical Equipment Maintenance.
    - b. 70E: Electrical Safety Requirements for Employer Workplaces.
    - c. 70: National Electrical Code.
    - d. 78: Lightning Protection Code.
    - e. 101: Life Safety Code.
  10. Inspections and tests shall utilize the following references:
    - a. Contract Drawings and Specifications.
    - b. Contractor's Short Circuit and Coordination Study.
    - c. Manufacturer's printed test procedures for respective equipment.
- J. Test Equipment:
1. Test equipment used by the Contractor is to be inspected and calibrated.
  2. Perform calibration and setting checks with calibrated test instruments of at least twice that of that of the accuracy of the equipment, device, relay or meter under test. Dated

calibration labels shall be visible on test equipment. Calibrations over 6 months old are not acceptable on field test instruments. Inspect test instruments for proper operation prior to proceeding with the tests. Record serial and model numbers of the instruments used on the test forms.

K. Test Procedures:

1. The Electrical Subcontractor is responsible for the preparation of the procedures and schedules for the work specified herein. This work is to be coordinated and compatible with both the work and schedule of the other crafts. Sequence the tests and checks so that the equipment can be energized immediately after the completion of the application tests.
2. Submit proposed testing and check out forms. The procedures shall provide specific instructions for the checking and testing of each electrical component of each system. Schedule tests and inspections as the job progresses. Test procedures submitted shall include job safety rules.

L. After each electrical system installation is complete, perform the tests to determine that the entire system is in proper working order and in accordance with applicable codes, manufacturer's instructions, drawings, and specifications. Tests are in addition to shop tests of individual items at the manufacturer's plant. Perform insulation and ground resistance tests before operating tests.

M. Perform insulation tests on electrical equipment, apparatus, cables, motors, generators, transformers, circuit breakers and switches, switchgear, motor control centers, and similar electrical equipment, at the following times and conditions:

1. Prior to energization and/or placing into service.
2. When damage to the insulation is suspected or known to exist.
3. After repairs or modifications to the equipment affecting the insulation.
4. Where lightning or other surge conditions are known to have existed on the circuit.

N. Make openings in circuits for test instruments and place and connect instruments, equipment, and devices, required for the tests. Upon completion of tests, remove instruments and instrument connections and restore circuits to permanent condition.

O. List each circuit and measured resistance as test data. Maintain record of insulation resistance values. Identify conductor, or equipment, date that value was taken and resistance value. Arrange information in tabular form and submit to Engineer.

P. Report inspections, tests, and calibrations in writing on engineer-approved reports/forms. The recorded data form shall have the signatures of the persons conducting the tests, authorized witnesses, and the engineer. The forms shall serve as the test and inspection checklist.

Q. When the electrical tests and inspections specified or required within this Section are completed and results reported, reviewed, and approved by the engineer, the Contractor may consider that portion of the electrical equipment system or installation electrically complete. The Contractor will then affix appropriate, approved, and dated completion or calibration labels to the tested equipment and notify the engineer of electrical completion. If the engineer finds completed work unacceptable, he will notify the Contractor in writing of the unfinished or deficient work, with the reason for his rejection, to be corrected by the Contractor. The Contractor will notify the engineer in writing when exceptions have been corrected. The Contractor will prepare a

"Notification of Substantial Electrical Completion" for approval by the engineer following engineer's acceptance of electrical completion. If later in-service operation or further testing identifies problems attributable to the Contractor, these will be corrected by the Contractor, at no additional cost to the Authority.

R. Specific Tests:

1. Perform the following specific tests. De-energize and isolate equipment and cable prior to performing the tests.
2. Motors:
  - a. Before energizing any machine, visually inspect for serviceability. Check manufacturer's instruction manual for correct lubrication and ventilation. Align motor with driven equipment. Check nameplate for electrical power requirements.
  - b. Test run motors uncoupled or unloaded, before placing into operation. Check the motor for rotation, speed, current and temperature rise under normal load and record the results. Maintain the proper color codes for phase identifications. This may require swaps at the motor for proper rotation. Use motor phase rotation meter prior to lead connection at motor in order to minimize later swaps.
3. Grounding Systems:
  - a. Test main building loops and major equipment grounds to remote earth, directly referenced to an extremely low resistance (approximately 1 ohm) reference ground bench mark. Perform a visual inspection of the systems, raceway and equipment grounds to determine the adequacy and integrity of the grounding. Ground testing results shall be recorded, witnessed, and submitted to the engineer.
  - b. Perform ground tests using a low resistance, Null balance type, ground testing ohmmeter, with test lead resistance compensated for. Use the type of test instrument which compensates for potential and current rod resistances.
  - c. Test each ground rod and measure ground resistance. If resistance is not 25 ohms or less, drive additional rods to obtain a resistance of 25 ohms or less. Submit tabulation of results to engineer. Include identification of electrode, date of reading and ground resistance value in the test reports.
  - d. Test each building and major equipment grounding system for continuity of connections and for resistance. Ground resistance of conduits, equipment cases, and supporting frames, shall not vary from that of system as a whole and shall not exceed 5 ohms to ground. Submit all readings to the engineer.
  - e. Where ground test results identify the need for additional grounding conductors or rods that are not indicated or specified, design changes will be initiated to obtain the acceptable values. The Contractor is responsible for the proper installation of the grounding indicated and specified.
4. Wire and Cable: (All conductors originating from main switchboard and distribution panels).
  - a. Before energizing any cable or wire, megger the insulation resistance of every external circuit wire to each other and to ground. Tests shall be conducted at voltages of 500 volts or lower. Continuity test each wire and cable to verify the field applied tag per conductor. Minimum insulation resistance values shall not be less than two megohms.
  - b. Take insulation resistance measurements for motor feeders. With motors disconnected, measure insulation resistance from load side of contactors or circuit breakers.

- c. Check cables and wires for the proper identification numbering and/or color coding.
  - d. Inspect cables for physical damage and proper connection in accordance with single line diagram.
5. Power Distribution System:
- a. Panelboards
    - 1) Inspect for physical damage and proper grounding.
    - 2) Compare nameplate information with schedules and report any discrepancies.
    - 3) Inspect all panelboards for cleanliness, workmanship, etc.

### 3.3 BRANCH CIRCUITRY

- A For all lighting and appliance branch circuitry, raceway sizes shall conform to industry standard maximum permissible occupancy requirements except where these are exceeded by other requirements specified elsewhere.
- B Circuits shall be balanced on phases at their supply as evenly as possible.
- C Feeder connections shall be in the phase rotation which establishes proper operation for all equipment supplied.
- D Reduced size conductors indicated for any feeders shall be taken as their grounding conductors.
- E Feeders consisting of multiple cables and raceways shall be arranged such that each raceway of the feeder contains one cable for each leg and one neutral cable, if any.
- F For circuitry indicated as being protected at 20 Amps or less, abide by the following:
  - 1. All 20 amp, 120/208 volt, 3 phase, 4 wire combined branch circuit homeruns shall be provided with a #8 AWG neutral conductor.
  - 2. Minimum conductor size shall be No. 12 A.W.G. copper.
  - 3. Conductors operating at 120 volts extending in excess of 100 Ft., or at 277 volts extending in excess of 200 ft., or the last outlet or fixture tap shall be No. 10 A.W.G. copper throughout.
  - 4. Lighting fixtures and receptacles shall not be connected to the same circuit.
  - 5. Circuits shall be balanced on phases at their supply point as evenly as possible.

### 3.5 REQUIREMENTS GOVERNING ELECTRICAL WORK IN DAMP OR WET LOCATIONS

- A. Outlets and outlet size boxes shall be of galvanized cast ferrous metal only.
- B. The finish of threaded steel conduit shall be galvanized only.
- C. Wires for pulling into raceways for lighting and appliance branch circuitry shall be limited to "THWN".
- D. Wires for pulling into raceways for feeders shall be limited to "THWN".

- E. Plates for toggle switches and receptacles shall have gasketed snap shut covers suitable for wet locations while in use.
- F. Final connections of flexible conduit shall be neoprene sheathed.
- G. Apply one layer of half looped plastic electric insulating tape over wire nuts used for joining the conductors of wires.
- H. Enclosures, junction boxes, pull boxes, cabinets, cabinet trims, wiring troughs and the like, shall be fabricated of galvanized sheet metal, shall conform to the following:
  - 1. They shall be constructed with continuously welded joints and seams.
  - 2. Their edges and weld spots shall be factory treated with cold galvanizing compound.
  - 3. Their connection to circuitry shall be by means of watertight hub connectors with sealing rings.
- I. Enclosures for individually mounted switching and overcurrent devices shall be NEMA Class IV weatherproof construction.
- J. The covers, doors and plates and trims used in conjunction with all enclosures, pull boxes, outlet boxes, junction boxes, cabinets and the like shall be equipped with gaskets.
- K. Panels shall be equipped with doors without exception.
- L. The following shall be interpreted as damp or wet locations within building confines:
- M. Spaces where any designations indicating weatherproof (WP) or vaporproof appear on the drawings.
- N. Below waterproofing in slabs applied directly on grade.
- O. Spaces defined as wet or damp locations by article 100 of the National Electric Code.

### 3.6 IDENTIFICATION AND TAGGING

- A. Identify individually:
  - 1. Each panelboard.
  - 2. Each switch and circuit breaker.
  - 3. Each feeder, wire or cable of all systems.
  - 4. Each end of nylon pullwire in empty conduit.
- B. Each wire or cable in a feeder shall be identified at its terminal points of connection and in each pullbox, junction box and panel gutter through which it passes.
- C. The nomenclature used to identify panelboards or load center shall designate the numbers assigned to them.
- D. The nomenclature used to identify switches or circuit breakers shall:



1. Where they disconnect mains or services designate this fact.
  2. Where they control feeders, designate the feeder number and the name of the load supplied.
  3. Where they control lighting and appliance branch circuitry, designate the name of the space and the load supplied.
- E. The nomenclature used to identify feeder wires and cables shall designate the feeder number.
- F. Identification for panelboards or load centers shall be by means of engraved lamacoid nameplates showing 1/4" high white lettering on a black background fastened to the outside face of the front.
- G. Identification for switches or circuit breakers shall be by means of the following:
1. Where individually enclosed engraved lamacoid nameplates showing 1/8" high white lettering on a black background fastened on the outside front face of the enclosure.
  2. Where in panelboards or load centers without doors same as for individually enclosed.
  3. Where in panelboards or load centers with doors typewritten directories mounted behind transparent plastic covers, in metal frames fastened on the inside face of the doors.
- H. Identification for wires and cables shall be by means of wrap around "brady" type labels.
- I. Device plates for local toggle switches, toggle switch type motor starters, pilot lights and the like, whose function is not readily apparent shall be engraved with 1/8" high letters suitably describing the equipment controlled or indicated.
- J. Phase identification letters shall be stamped into the metal of the bus bars of each phase of the main busses of each switchboard and each panelboard. The letters shall be visible from at least one "normal posture" location without having to demount any current carrying or supporting elements.
- K. Equip the front face of all switchboard pull boxes junction boxes and the like containing cables, busing or devices operating in excess of 600 volts with enameled sheet metal "red on white" signs reading "DANGER HIGH VOLTAGE."
- L. Equip all electric closets and the like with enameled sheet metal "red on white" signs reading "Electrical Equipment Room No Storage Permitted." Signs shall be mounted at clearly visible locations within the rooms.
- M. Provide a sign at the service entrance equipment room indicating the type and location of all on site emergency or standby power sources.
- N. Identify each outlet box, junction box, and cabinet used in conjunction with empty raceway for wires of a future system by means of indelible markings on the inside denoting the system.
- O. Prior to installing identifying tags and nameplates, submit their nomenclature for approval. Conform to all revisions issued by the Designer.

## 3.7 SUPPORTS AND FASTENINGS

- A. Support work in accordance with best industry standards and the National Electric Code.
- B. Include supporting frames or racks for equipment, intended for vertical surface mounting, which is required in a free standing position.
- C. Supporting frames or racks shall be of standard angle, standard channel or specialty support system steel members. They shall be rigidly bolted or welded together and adequately braced to form a substantial structure. Racks shall be of ample size to assure a workmanlike arrangement of all equipment mounted on them.
- D. No work intended for exposed installation shall be mounted directly on any building surface. In such locations, flat bar members or spacers shall be used to create a minimum of 1/4" air space between the building surfaces and the work. Provide 3/4" thick exterior grade plywood painted with two coats of fire-retardant grey paint for mounting of panelboards.
- E. Nothing (including outlet, pull and junction boxes and fittings) shall depend on electric conduits, raceways or cables for support.
- F. Nothing shall rest on, or depend for support on, suspended ceiling media.
- G. Support less than 2" trade size, vertically run, conduits at intervals no greater than 8 Ft. Support such conduits, 2-1/2" trade size or larger, at intervals no greater than the story height, or 15 Ft, whichever is smaller.
- H. Where they are not embedded in concrete, support less than 1" trade size, horizontally run, conduits at intervals no greater than 7 ft.. Support such conduits, 1" trade size or larger, at intervals no greater than 10 ft.
- I. Support all lighting fixtures directly from structural slab, deck or framing member.
- J. Where fixtures and ceilings are such as to require fixture support from ceiling openings frames, include in the electric work the members necessary to tie back the ceiling opening frames to ceiling suspension members or slabs so as to provide actual support for the fixtures noted above.
- K. As a minimum procedure, in suspended ceilings support small runs of circuitry (e.g., conduit not in excess of 1 inch trade size) from ceiling suspension members as defined above. Support larger runs of circuitry directly from structural slabs, decks or framing members.
- L. Fasten electric work to building structure in accordance with the best industry practice.
- M. Floor mounted equipment shall not be held in place solely by its own dead weight. Include floor anchor fastenings in all cases.
- N. For items which are shown as being ceiling mounted at locations where fastenings to the building construction element above is not possible, provide suitable auxiliary channel or angle iron bridging tying to building structural elements.

- O. As a minimum procedure, where weight applied to the attachment points is 100 lbs. or less, fasten to concrete and solid masonry with bolts and expansion shields.
- P. As a minimum procedure, where weight applied to building attachment points exceeds 100 lbs., but is 300 lbs. or less, conform to the following:
- Q. At field poured concrete slabs, utilize inserts with 20' minimum length slip-through steel rods, set transverse to reinforcing steel.

### 3.9 SPLICING AND TERMINATING WIRES AND CABLES

- A. Maintain all splices and joints in removable cover boxes or cabinets where they may be easily inspected.
- B. Locate each completed conductor splice or joint in the outlet box, junction box, or pull box containing it, so that it is accessible from the removal cover side of the box.
- C. Join solid conductors No. 8 AWG and smaller by securely twisting them together and soldering, or by using insulated coiled steel spring "wire nut" type connectors. Exclude "wire nuts" employing non expandable springs. Terminate conductors No. 8 AWG and smaller by means of a neat and fast holding application of the conductors directly to the binding screws or terminals of the equipment or devices to be connected.
- D. Join, tap and terminate stranded conductors No. 6 AWG and larger by means of solder sleeves, taps; and lugs with applied solder or by means of bolted saddle type or pressure indent type connectors, taps and lugs. Exclude connectors and lugs of the types which apply set screws directly to conductors. Where equipment or devices are equipped with set screw type terminals which are impossible to change, replace the factory supplied set screws with a type having a ball bearing tip. Apply pressure indent type connectors, taps and lugs utilizing tools manufactured specifically for the purpose and having features preventing their release until the full pressure has been exerted on the lug or connector.
- E. Except where wire nuts are used, build up insulation over conductor joints to a value, equal both in thickness and dielectric strength, to that of the factory applied conductor insulation. Insulation of conductor taps and joints shall be by means of half lapped layers of rubber tape, with an outer layer of friction tape; by means of half lapped layers of approved plastic electric insulating tape; or by means of split insulating casings manufactured specifically to insulate the particular connector and conductor, and fastened with stainless steel or non metallic snaps or clips.
- F. Exclude splicing procedures for neutral conductors in lighting and appliance branch circuitry which utilize device terminals as the splicing points.
- G. Exclude joints or terminations utilizing solder in any conductors used for grounding or bonding purposes.
- H. Exclude all but solder or pressure indent type joints in conductors used for signaling or communications purposes.

- I. Lugs for conductors used to make phase leg connections on the line side of the main service overcurrent and switching device shall be of the limiter type.

### 3.10 PULLING WIRES INTO CONDUITS AND RACEWAYS

- A. Delay pulling wires or cables in until the project has progressed to a point when general construction procedures are not liable to injure wires and cables, and when moisture is excluded from raceways.
- B. Utilize nylon snakes or metallic fish tapes with ball type heads to set up for pulling. In raceways 2" trade size and larger, utilize a pulling assembly ahead of wires consisting of a suitable brush followed by an 3 1/2" diameter ball mandrel.
- C. Leave sufficient slack on all runs of wire and cable to permit the secure connection of devices and equipment.
- D. Include circular wedge type cable supports for wires and cables at the top of any vertical raceway longer than 20 feet. Also include additional supports spaced at intervals which are no greater than 10'. Supports shall be located in accessible pull boxes. Supports shall be of a nondeteriorating insulating material manufactured specifically for the purpose.
- E. Pulling lubricants shall be used. They shall be products manufactured specifically for the purpose.
- F. Slack on wires and cables located in cabinets and pull boxes shall be formed and set in place in groupings corresponding to their occupancy of raceways. They shall also be arranged, with insulators and supports provided where necessary, such that cable shims or other such temporary expedients do not have to be left permanently in place to prevent the wires and cables from shifting when covers or trims are removed.

### 3.11 REQUIREMENTS FOR THE INSTALLATION OF JUNCTION BOXES, OUTLET BOXES AND PULL BOXES

- A. Flush wall mounted outlet boxes shall not be set back to back but shall be offset at least 12" horizontally regardless of any indication on the drawings.
- B. Locate all boxes so that their removable covers are accessible without necessitating the removal of parts of permanent building structure, including piping, ductwork, and other permanent mechanical elements.
- C. In conjunction with concealed circuitry, abide by one of the following instructions (as may be applicable to the conditions) in order to assure the aforementioned accessibility. (Not required for circuitry concealed by removable suspended ceiling tiles.)
  - I. For a small (outlet size) box on circuitry concealed in a partition or wall, locate box or fitting so that its removable cover side (or the face of any applied raised cover) penetrates through to within 1/8" a of the exposed surface of the building materials concealing the circuitry and apply a blank or device plate to suit the functional requirements.

2. For a large box on circuitry concealed in a partition, suspended ceiling, or wall, locate box totally hidden but with its removable cover directly behind an architectural access door or panel (included for the purpose, separate from the electric work) in the building construction which conceals the circuitry.
  3. For a small (outlet size) box on circuitry concealed above and intended as an outlet for a surface mounted lighting fixture or other such electrical item, locate box so that its removable cover side penetrates through to the exposed surface of the building materials concealing the circuitry. Arrange the mounting of the lighting fixture or other item so that it completely covers the opening in the building construction caused by the box.
  4. For a small (outlet size) box on circuitry concealed in a suspended ceiling, and intended as an outlet for a non demountable type of recessed lighting fixtures or other such electrical items, locate box totally hidden but with its removable cover not more than one foot away from the building construction opening occupied by the demountable items.
- D. Apply junction and pull boxes in accordance with the following:
1. Include pull boxes in long straight runs of raceway to assure that cables are not damaged when they are pulled in.
  2. Include junction and pull boxes to assure a neat and workmanlike installation of raceways.
  3. Include junction and pull boxes to fulfill requirements pertaining to the limitations to the number of bends permitted in raceway between cable access points, the accessibility of cable joints and splices, and the application of cable supports.
  4. Include all required junction and pull boxes regardless of indications on the drawings (which, due to symbolic methods of notation, may omit to show some of them).
- E. Apply outlet boxes in accordance with the following:
1. Unless noted below or otherwise specifically indicated, include a separate outlet box for each individual wiring device, lighting fixture and signal or communication system outlet component. Outlet boxes supplied attached to lighting fixtures shall not be used as replacements for the boxes specified herein.
  2. A continuous row of fixtures of the end to end channel type, designed for "through wiring," and wired in accordance with the specification hereinafter pertaining to circuitry through a series of lighting fixtures, may be supplied through a single outlet box.
  3. A series of separate fixtures, designed for "through wiring," spaced not more than 4' apart, and inter connected with conduit or raceway and circuitry which is in accordance with the specifications hereinafter pertaining to circuitry through a series of lighting fixtures, may be supplied through a single outlet box.
  4. Connection to recessed ceiling fixtures supplied with pigtails may be arranged so that more than one, but not more than four, such fixtures are connected into a single outlet box. When adopting this procedure:
    - a. Utilize an outlet box no smaller than 5" square by 2 1/2" deep.
    - b. Allow no fixture to be supplied from an outlet box in another room.
  5. Multiple local switches indicated at a single location shall be gang mounted in a single outlet box.

6. Include all required outlet boxes regardless of indications on the drawings (which due to symbolic methods of notation, may omit to show some of them).
- F. Install junction boxes, pull boxes and outlet boxes in accordance with the following:
1. Exclude surface mounted outlet boxes in conjunction with concealed circuitry.
  2. Exclude unused circuitry openings in junction and pull boxes. In larger boxes each such opening shall be closed with a galvanized sheet steel plate fastened with a continuous weld all around. In small outlet type boxes, utilize plugs as specified for such boxes.
  3. Close up all unused circuitry openings in outlet boxes. Unused openings in cast boxes shall be closed with approved cast metal threaded plugs. Unused openings in sheet metal boxes shall be closed with sheet metal knock out plugs.
  4. Outlet boxes for switches shall be located at the strike side of doors. Indicated door swings are subject to field change. Outlet boxes shall be located on the basis of final door swing arrangements.
  5. Boxes and plaster covers for duplex receptacles shall be arranged for vertical mounting of the receptacle.
  6. Equip outlet boxes used for devices which are connected to wires of systems supplied by more than one set of voltage characteristics with barriers to separate the different systems.
- G. Barriers in junction and pull boxes of outlet size shall be of the same metal as the box.
- H. Barriers in junction and pull boxes which are larger than outlet size shall be of the polyester resin fiberglass of adequate thickness for mechanical strength, but in no case less than 1/4" thick. Each barrier shall be mounted, without fastenings, between angle iron guides so that they may be readily removed.

### 3.13 REFILL GENERATOR FUEL TANK

- A. Fill generator base tank 100% upon completion of all generator tests.
- B. All emergency system generation and distribution equipment shall be installed within dedicated two nights or timeframe allotted by the owner.

### 3.13 FIRE ALARM SYSTEM TEST

- A. Test fire alarm system per NFPA 72.
- B. Arrange the presence of the Narragansett Fire Department to be present at testing.

### 3.14 INSTALLING CIRCUITRY

- A. In runs of conduit or raceway including flexible limit the number of bends between cable access points to a total which does not exceed the maximum specified for the particular system. Where no such maximum is specified, limit the number to four right angle bends or the equivalent thereof.

- B. In each conduit or raceway assigned for the future pulling in of wires, include a nylon drag cord. In raceways 2" trade size and larger, the cord shall be pulled in utilizing a suitable brush, followed by an 85% diameter ball mandrel ahead of the cord in the pulling assembly. In the event that obstructions are encountered, which will not permit the drag cord to be installed, the blocked section of raceway shall be replaced and any cutting and patching of the structure involved in such replacement shall be included as part of the electric work.
- C. Circuitry shall be arranged such that conductors of one feeder or circuitry carrying "going" current are not separated from conductors of the same feeder or circuitry carrying "return" current by any ferrous or other metal. Where not within raceways, all "going" and "return" current conductors of one feeder or circuit shall be laced together so as to minimize induction heating of adjacent metal components.
- D. Sleeves used where circuitry is to penetrate waterproof slabs, decks and walls, shall be of a type selected to suite the water condition encountered in the field.

### 3.15 PHYSICAL SEPARATION OF NORMAL, OPTIONAL STANDBY, AND EMERGENCY SYSTEMS

- A. All portions of the emergency system, such as feeders, shall also be enclosed within two-hour fire rated enclosures, provided by the Electrical Subcontractor. Type, method and material of two-hour rated enclosures shall be approved by the local Electrical Inspector.
- B. Emergency system shall be kept entirely independent of all other wiring, devices and equipment, and shall not enter the same raceways, boxes or cabinets with each other or other wiring, except in transfer switches.

### 3.16 CORE DRILLING AND SEALING

- A. Core drill all penetrations as necessary for the work called out.
- B. Seal all penetrations around new conduits penetrations and where existing conduits, through walls, are being removed.
- C. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
- D. Install fill materials for systems by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to water-tight and vapor-tight seals.
  - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
  - 3. For fill materials that will remain exposed after completing Work, finish to produce

smooth, uniform surfaces that are flush with adjoining finishes.

END OF SECTION



## SECTION 321443 - POROUS UNIT PAVING

### 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. Permeable concrete pavers
  - 2. Setting bed for pavers.
  - 3. Edge restraints.

#### 1.3 PREINSTALLATION MEETINGS

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

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For materials other than aggregates.
- B. Product Data: For the following:
  - 1. Pavers.
  - 2. Edge restraints.
- C. Sieve Analyses: For aggregate materials, according to ASTM C136.
- D. Samples:
  - 1. Full-size units of each type of unit paver indicated.
  - 2. Exposed edge restraints.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For unit pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.

## 1.6 QUALITY ASSURANCE

- A. Mockups: Build loose mockup of no less than 4 feet by 4 feet to demonstrate aesthetic effects, and to set quality standards for materials and execution. Materials used in the loose-lain mockup will be used as part of the final construction.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.
- B. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

## PART 2 - PRODUCTS

## 2.1 CONCRETE UNIT PAVERS

- A. Basis of Design Product: Hydro-Flo Technology Pavers by Pacific Interlock Pavingstone, San Jose, CA (408)379.1436
  - 1. Paver Style: Holland
  - 2. Face Dimensions: 8" x 4"
  - 3. Thickness: 80 mm.
  - 4. Color: As selected by Architect from manufacturer's full range.
  - 5. Pattern: Herringbone

## 2.2 ACCESSORIES

- A. Steel Edge Restraints: Steel edging, 3/16 inch thick by 4 inches (100 mm) high with loops pressed from or welded to face to receive stakes at 36 inches o.c., and with steel stakes 15 inches long for each loop.

## 2.3 AGGREGATE SETTING-BED MATERIALS

- A. Crushed Stone with 90% fractured faces, LA Abrasion < 40 per ASTM C131 minimum CBR of 80% per ASTM D 1883.
  - 1. Do not use rounded river gravel
  - 2. All stone materials shall be washed with less than 1% passing the no 200 sieve
  - 3. Joint/opening filler, bedding, base and subbase: conforming to ASTM D448 gradation as shown in tables below:

Table 1: ASTM C33 Fine Aggregate Joint Filler – Grading Requirements

<b>Sieve Size</b>	<b>Percent Passing</b>
3/8 inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	5-30
No. 100	0-10

Table 2: No. 8 Bedding Aggregate – Grading Requirements

<b>Sieve Size</b>	<b>Percent Passing</b>
½ inch	100
3/8 inch	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

Table 3: No. 57 Base Aggregate – Grading Requirements

<b>Sieve Size</b>	<b>Percent Passing</b>
1-1/2 inch	100
1 inch	95-100
½ inch	25-60
No. 4	0-10
No. 8	0-5

Table 4: No. 2 Subbase Aggregate – Grading Requirements

<b>Sieve Size</b>	<b>Percent Passing</b>
3 inch	100
2-1/2 inch	90-100
2 inch	35-70
1-1/2 inch	0-15
¾ inch	0-5

## PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Compact soil subgrade to a minimum of 95% standard Proctor density for dense-graded aggregate bases. Density should be monitored in the field with a nuclear density gauge. Compaction of open-graded bases should be within at least five passes of roller compactor without vibration.
- B. Verify that base is dry, uniform, even, free of any sediment and ready to support sand, pavers and imposed loads.
- C. Verify gradients and elevations of base are correct.
- D. Verify location, type, installation and elevation of edge restraints around perimeter area to be paved. Edge restraint to be 10 mm below finished paver surface; top edge of restraints are not to be visible.
- E. Beginning of installation means acceptance of base and edge restraints.

## 3.2 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be structurally unsound or visible in finished work. Ensure pavers are free from foreign materials before installation
- B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- D. Tolerances:
  - 1. Variation in Plane between Adjacent Units (Lipping): Do not exceed 1/16-inch unit-to-unit offset from flush.
  - 2. Variation from Level or Indicated Slope: Do not exceed 1/8 inch in 24 inches and 1/4 inch in 10 feet or a maximum of 1/2 inch.
- E. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.
  - 1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after porous paver installation.

### 3.3 SETTING-BED INSTALLATION

- A. Proof-roll prepared subgrade to identify soft pockets and areas of excess yielding. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- B. Spread leveling course aggregate evenly over the compacted, dense-graded base course and screed uniformly to 1 – 1-1/2 inch thickness. The screeded aggregate should not be disturbed. Place sufficient aggregate to stay ahead of the laid pavers.

### 3.4 PAVER INSTALLATION

- A. Lay the pavers in the pattern shown on the drawings, maintain straight patterns and lines.
- B. Joints between the pavers shall be between 1/16” and 1/8” wide.
- C. Fill gaps at the edges of the paved area with cut pavers.
- D. Compact pavers into leveling course with a low-amplitude plate vibrator capable of at least 5000-lbf (22-kN) centrifugal compaction force at 75 to 90 Hz. Use vibrator with neoprene mat on face of plate or other means as needed to prevent cracking and chipping of pavers. Perform at least three passes across paving with vibrator. Vibrate and compact pavers again, sweeping a small fraction of ASTM C33 fine aggregate or equivalent into the joints and openings until it is within ½ of the top surface. This will require at least two or three passes with the compactor.
- E. As work progresses, remove and replace pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

END OF SECTION 321443

## SECTION 321713 - PARKING BUMPERS

### 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. Resilient wheel stops.

#### 1.3 ACTION SUBMITTALS

- A. Product Data:
  - 1. Resilient wheel stops
- B. Samples for Verification: For wheel stops, 6 inches long, showing color and cross section; with mounting hardware.

### PART 2 - PRODUCTS

#### 2.1 PARKING BUMPERS

- A. Resilient Wheel Stops: Solid, integrally colored rubber; UV stabilized; 4 inches high by 6 inches wide by 72 inches long. Provide chamfered corners and a minimum of four factory-formed or -drilled vertical holes through wheel stop for anchoring to substrate.
  - 1. Source Limitations: Obtain wheel stops from single source from single manufacturer.
  - 2. Color: Black.
  - 3. Embedded Markings: Molded-in, yellow reflective markings, permanently inset in exposed surface.
  - 4. Mounting Hardware: 18-inch galvanized-steel spikes for mounting into gravel sub-base.
  - 5. Adhesive: Polyurethane or epoxy, as recommended in writing by wheel-stop manufacturer for adhesion to substrate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pavement is in suitable condition to begin installation in accordance with manufacturer's written instructions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install wheel stops in accordance with manufacturer's written instructions unless otherwise indicated.
- B. Install wheel stops in bed of adhesive before anchoring to substrate.
- C. Securely anchor wheel stops to substrate with hardware in each preformed vertical hole in wheel stop as recommended in writing by manufacturer. Recess head of hardware beneath top of wheel stop.

END OF SECTION 321713

## SECTION 321723 - PAVEMENT MARKINGS

### 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. Painted markings applied to paver surfaces.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: Include technical data and tested physical and performance properties.
  - 1. Pavement-marking paint, latex.
  - 2.
- B. Shop Drawings:
  - 1. Indicate pavement markings, colors, parking spaces, and dimensions to adjacent work.
  - 2. Indicate, with international symbol of accessibility, spaces allocated for people with disabilities.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches square.

#### 1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Rhode Island DOT for pavement-marking work.

#### 1.5 FIELD CONDITIONS

- A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F.



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable manufacturers, subject to compliance with the requirements of this section, include:
  - 1. Benjamin Moore
  - 2. Sherwin Williams
  - 3. Approved Equal
- B. Source Limitations: Obtain pavement-marking paints from single source from single manufacturer.

### 2.2 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

### 2.3 PAVEMENT-MARKING PAINT

- A. Pavement-Marking Paint, Latex: MPI #97, latex traffic-marking paint.
  - 1. Color: White.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

### 3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Sweep and clean surface to eliminate loose material and dust.
- C. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to paver surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

### 3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723